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THE
LONDON
MEDICAL REPOSITORY,
MONTHLY JOURNAL
AND
REVIEW.

BY

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Quærere Verum. Horace.

VOL. VI.

FROM JULY TO DECEMBER, 1816.

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CONTENTS

OF

VOLUME VI.

PART I.

ORIGINAL COMMUNICATIONS.

PAGE

1. Retrospect of the Progress of Medical Science from July to December, 1816 - - 1
2. Synoptical View of the State of the Atmosphere, &c. in London, between the 20th of November 1815, and the 19th of May 1816 - - - - - 43
3. Nosological Table of the aggregate of the Cases recorded in the Monthly Registers of the *Repository* of the Diseases of London, between the 20th of November 1815, and the 19th of May 1816 - - - - 44
4.—5. Quarterly Reports of the Diseases of the Boys in Christ's Hospital, by Henry Field, Apothecary 49, 265
6. Some Observations on Inflammation, in Reply to *Dr. Parry*, by Wilson Philip, M.D. Worcester - - 52
7. On the Absence of Urea in the Urine of Hepatitis, by C. B. Rose, Surgeon, Bottesdale *(with a Diagram)* 57
8. On the Poisonous Effects of the Bark of the Augustura Pseudo-ferruginea or spurious Angustura Bark, by Professor Emmert, of Tübingen - - 89
9. Observations on Hydrophobia, by R. Bellingham, Surgeon 97
10. An Instance in Confirmation of the Origin of Vaccine Virus, by J. Ring, Member of the Royal College of Surgeons, London - - - - - 101
11. Remarks on the Practice of a Bone-Setter, by J. Dunn, Pickering, Yorkshire, Member of the Royal College of Surgeons, London - - - - 102

PAGE

12. On the Use of Spiritus Salis dulcis in Scrofula, by P. C. Blackett, Member of the Royal College of Surgeons, London - - - - - - 105

13. A brief Sketch of the Medical Topography of Salisbury, with a List of the Medicinal Plants found in its Vicinity, by H. Smith, M.D. F.L.S. Member of the Royal College of Physicians, and one of the Physicians of the Salisbury Infirmary - - - - - 106

14. Remarks on *Dr. Wilson Philip*'s Paper, intitled "Some Observations on Inflammation," by C. H. Parry, M.D. F.R.S. &c. Bath - - - 113

15. A Case of Cynanche Laryngea, by W. Robarts, Burnham, Bucks, Member of the Royal College of Surgeons, London - - - - - - 114

16. Some Remarks on the Mineral Springs of Yorkshire, and on the Nature and Properties of Common Spring Water, as an Article of Diet, by J. K. Walker, M.D. of Caius College, Cambridge, and Physician to the Huddersfield Dispensary - - - - 177

17. Observations in Proof of the Contagious Nature of the Bulam Fever, and on the Mis-statements of *Dr. Burnett* regarding that Disease, by W. Pym, Deputy Inspector of Hospitals, &c. &c. - - - - - 186

18. Account of a Lusus Naturæ in a Pig, by C. B. Rose, Surgeon, Bottesdale - - - - - 209

19. A Description of the Mode of Preserving the Vaccine Lymph in a Fluid State, by J. T. Giraud, Surgeon-Apothecary, Feversham, Kent *(with a Diagram)* 210

20. A Case of Chorea in a Girl nine Years of Age, in which the Extract of Belladonna was given with success, by R. M. Kerrison, Member of the Royal College of Surgeons, and of the Society of Apothecaries, London 266

21. A Case of Puerperal Fever occurring the Twenty-seventh Day after Delivery, by W. Woodward, Honiton, Devon, Member of the Royal College of Surgeons, London, &c. - - - - - - 271

22. A Case of Apoplexy, by R. Knox, M.D. Hospital Assistant, Hilsea - - - - - - 275

23. A Case of Pemphigus, or Vesicular Fever, by E. Daniell, Surgeon-Apothecary, Weldon, Northamptonshire 277

PAGE
24. Some Observations on the Pathology of Insanity, by G. M. Burrows, M.D. F.L.S. &c. London - 279
25. Some Observations on Suppression and Diminished Excretion of Urine, by a Member of the Royal College of Physicians, London - - - - 353
26. Observations on the Preservation and the Insertion of the Vaccine Lymph, by E. Leese, Baker Street, Member of the Royal College of Surgeons, London - - 363
27. Remarks on Scripture Midwifery, and on some Circumstances connected with the Female Habit mentioned in the Sacred Writings - - - - - 365
28. A Case of Union of a Finger divided at the Middle Joint, by S. Peacock, Surgeon, Liverpool - - 368
29. Cases illustrative of the Efforts made by Nature for the Cure of Diseases, by W. Newnham, Surgeon-Apothecary, Farnham, Surry - - - 369
30. An Account of an Improved Blow-Pipe, by J. Edwards, Putney, Member of the Royal College of Surgeons, London *(with a Diagram)* - - - - 375
31. A Reply to *Dr. Pym*'s "Observations in Proof of the Contagious Nature of the Bulam Fever, and on the Mis-statements of *Dr. Burnett* regarding the Disease," by W. Burnett, M.D. of Chichester, Sussex - 441
32. A Case of Necrosis successfully treated, by E. Daniell, Surgeon-Apothecary, Weldon, Northamptonshire 464
33. On Scripture Midwifery - - - - 467
34. Cases of Puerperal Fever treated with Spirit of Turpentine, by J. Macabe, M.D. Dublin - - - - 468
35. An Account of a singularly painful Affection of the Appendages of the left Eye, from an uncommon Cause, successfully treated, by J. Stevenson, Member of the Royal College of Surgeons, London, and Lecturer on the Eye and Ear, &c. &c. - - - - 471
36. Case of Death from Oxalic Acid, by G. Johnson, Member of the Royal College of Surgeons, and of the Society of Apothecaries, London, and Secretary to the Medical Society of Guy's - - - - - 474

AUTHENTICATED CASES, OBSERVATIONS, AND DISSECTIONS.

37. Case of Petechial Fever - - - - 116
38. Case of Hydrophobia - - - - [illegible]

PAGE
39. Case of Apoplexy - - - - - 212
40. Case of Phlegmasia Dolens - - - 289
41. Case of Mania - - - - - - 377
42. Case of Abortion, accompanied with Hydatids - 379
43. Two Cases illustrative of the Advantages of the Ring Pessary - - - - - id.
44. Singular Case of Somnambulism - - 475
45. Case of Purpura Hæmorrhagica - - 478
46. Case of Epilepsy - - - - 479
47. Case of Infantile Remittent Fever - - id.

PART II.

ANALYTICAL REVIEW.

1. Majendie's Précis Elémentaire de Physiologie, Tome I 62
2. Orfila's Traité des Poisons, &c. Vol. II. - 118
3. Kerr's Observations on the Harveian Doctrine of the Circulation of the Blood - - - 132
4. Waller on the Incubus, or Night-Mare - - 143
5. Bedingfield's Compendium of Medical Practice - 214
6. Moreau sur la Résection des Os - - 233
7. Ainslie's Materia Medica of Hindoostan - 240
8. Scudamore on the Nature and Cure of Gout - 290
9. Wadd on Diseased Bladder and Testicle - - 309
10. Keith's System of Physiological Botany
11. Mirbel's Elemens de Physiologie Végétale et de Botanique - - - } 313, 486
12. Armstrong's Illustrations of Typhus and other Fevers 380
13. Reid's Essays on Hypochondriacal and other Nervous Affections - - - - - - 399
14. Transactions of the Medico-Chirurgical Society 408, 512
15. Stewart on Uterine Hæmorrhage - - - 480

SELECTIONS.

1. Faxar's Account of a Soda Lake in South America 150
2. Brande on the Bad Effects of the Incautious Use of Magnesia - - - - - - 244
3. Magnetic Cures - - - - - - 329
4. *Some Account of* the Alstenia Teiformis, or Tea of Bogota 413

PART IV.

FOREIGN MEDICAL SCIENCE AND LITERATURE.

PHYSIOLOGY, PRACTICE OF MEDICINE, AND SURGERY.

PAGE
Raisin on Atropa Belladonna in Hooping-Cough - - 76
Authenrieth's Observations on Consumption - - 154
Cullerier on the Contagion of Syphilis - - - 245
Prochaska on one Fœtus found within another - 330
Remer's Observations on Hydrops Hydatitodes - 332
Horn on an Aneurism of the Heart and Aorta - 333
Coutanceau on the Formation of Carbonic Acid in Respiration 415
Frank on the Plica Polonica - - - 417
Auglagnier on Hydatids passed by the Urethra - 418

CHEMISTRY AND PHARMACY.

Kirchoff on the Formation of Sugar during Germination 158
John on a particular Acid extracted from Stick Lac - 163
Martius on the Oleum Cajeputi - - - 250
Laubert on the Cinchona Condaminea - - 251
Laugier on Matter enclosed in a Cyst - - 335
La Grange's Experiments on Garlick - - 337
Saussure on the Proportion of the Elements of the Atmosphére 339
Majendie on the Gases found in the Human Intestines 421
Figuier's Experiments on the Preparation of Oxide of Gold 424
Dulong on the Combinations of Azote with Oxygen - 522

BOTANY.

Du Petit Thouars on the Effects produced upon different Trees by Frosts - - - - 164

PART V.

MEDICAL AND PHYSICAL INTELLIGENCE.

A Report from the COURT of EXAMINERS to the COURT of ASSISTANTS of the SOCIETY of APOTHECARIES 341
List of CERTIFICATED APOTHECARIES - - 345
Royal Society, Proceedings of the - - 165, 255
Society for Relief of Widows and Orphans of Medical Men 429
Society for the Benefit of Widows and Orphans of Officers of the Hospital and Regimental Medical Staff of the Army id.

PAGE
Society, Medical Annuitant and Benevolent - - 342
Society, New Rupture - - - - 430
Regulations of the University of Aberdeen for granting Diplomas 528
GALVANISM - - - - - - 168
New BILL for Regulating SURGERY in Great Britain and Ireland - - - - - 168
Physiological Information - - - - 430
Pharmaceutical Information - - - - 343
Chemical Information - - - 262, 335, 432
Medical Information - - - 167, 256, 342
Therapeutical Information - - - - 431
Botanical Information - - - - 433
PRIZE QUESTIONS of Learned Societies - - 166
Miscellaneous Intelligence - - 88, 168, 344, 440
Literary Intelligence - - 176, 264, 352, 433, 536
NOTICES of LECTURES - - 88, 176, 256, 344, 556
Notices of Lectures at Edinburgh - - - 440
Notice to Medical Students - - - - 528
Notice of Examinations in Botany - - - id.
Meteorological Tables kept at Richmond 82, 170, 258, 346, 434, 530
Meteorological Tables of London } 83, 171, 259, 347, 435, 531
WEEKLY BILLS of MORTALITY for LONDON }
Registers of Diseases in London 84, 172, 260, 348, 436, 532
Observations on Prevailing Diseases in London 85, 173, 261, 349, 437, 533
Prices of Drugs - - 86, 174, 262, 350, 438, 534
Prices of Phials - - 87, 175, 263, 351, 439, 535
Monthly Catalogue of Books } 88, 176, 264, 352, 440, 536
Notices to Correspondents }

CORRIGENDA.

Page 27 Reverse the quantities of gaseous contents of the Tunbridge Wells Mineral Water in the second table, 1792, Contents 16.—In 1816, Contents 13·30.
98 line 31 *for* me *read* one
100 —— 4 *for* bolting *read* butting
100 —— 14 *for* but *read* beating
101 —— 20 *for* pliable *read* friable

P. 180 line 32 *for* I am here *read* I am not here
181 —— 40 *for* will do *read* will not do
184 —— 27 *for* precision *read* progress
184 —— 32 *for* impediments *read* ingredients
437 in Register *for* Purpura humorrhalis *read* Purpura hæmorrhagica
532 line 2 *for* September—October *read* October—November

THE
LONDON MEDICAL
REPOSITORY.

No. 31. JULY 1, 1816. VOL. VI.

RETROSPECT
OF THE
PROGRESS OF MEDICAL SCIENCE,
FROM JANUARY TO JULY, 1816.

> Quamquam igitur multa sint, ad ipsas artes proprie non pertinentia, tamen eas adjuvant, excitando artificis ingenium. Itaque ista quoque naturæ rerum contemplatio, quamvis non faciat medicum, aptiorem tamen medicinæ reddit. CELSUS, lib. i.

> What cannot Art and Industry perform,
> When Science plans the progress of their toil?
> BEATTIE'S MINSTREL, Book 2.

IT is, indeed, impossible to conceive to what extent Art may proceed, when guided by the torch of Science. That Medicine, to which this observation is particularly applicable, has been greatly advanced by the cultivation of general Science, cannot be denied; and that an extensive diffusion of scientific acquisitions, among the rising candidates for medical celebrity, is more likely than any other circumstance to advance the healing art to a high state of perfection, can scarcely be questioned. It inures the mind to patient and minute investigation; renders it cautious of receiving any fact as indubitable, unless it be supported by evident proofs; enables it to generalize the information it acquires, to draw correct inferences, and to detect specious hypotheses under the garb of the most plausible theory. Science is to the practical physician, also, what geometry is to the architect — the ground-work of all his reasonings and his operations.

Impressed with these truths, we have endeavoured to extend the information collected in our Retrospects beyond the verge of the simple theory and practice of medicine; and to embrace as much of the collateral sciences as our limits will permit. But in selecting the notices on these sciences, on Chemistry, Natural History, and Botany, we have endeavoured always to preserve in view the primary object of our labours; and to display chiefly those facts which are likely to prove useful, and, consequently, are, for clinical purposes, most important to the practitioner. In doing so, it is our wish studiously to avoid the recording and spreading of erroneous opinions; and by bringing under one view all that has been produced within a limited period, we trust to be able to assist those, who, from being fully occupied in the practice of their profession, cannot spare sufficient time for much reading, to keep pace with the advancement of the art; and, by affording them the means of proceeding ardently in the path of practical investigation, to render their labours at least accessary in promoting its progress.

The six months which we have to retrace, has been rather deficient in the multiplication of books; but this is no reason that they should not be marked by many valuable discoveries and important improvements: of this, however, we shall endeavour to enable our readers to judge for themselves, by the sketch we are about to lay before them.

ANATOMY, PHYSIOLOGY, AND PATHOLOGY.

So little has been done in the department of Human Anatomy since our last Retrospect, that we have one English work only on this subject to notice, and one which does not even aim at much pretension to novelty. Its author, Mr. Armiger, presents it as the first part of a more extended work, which, under the title of "Rudiments*," he intends to serve as an elementary guide for students commencing their inquiries in Anatomy and Physiology. The arrangement is sufficiently accurate, and the definitions perspicuous; but it would have proved much more useful to the student, had it contained references to the best authors: for although it points out a method of classing the information he may obtain; and leads him to adopt a mode of study likely to facilitate very much his researches; yet he is, still, left unassisted as to the best sources from which he can obtain more detailed information.

In France, Dr. Cloquet has collected, in his *Traité d'Anatomie Descriptive*†, all that is known on pure Anatomy. The work is professedly simple descriptive anatomy; touching neither on Physiology, Pathology, nor historical discussion; and has been written strictly according to his own ideas of Anatomical writing. "C'est," says he, "le scalpel à la main qu'on doit faire un ouvrage d'anatomie; c'est à ceux qui ont le scalpel à la main que je laisse surtout mon livre à juger."

---

* *Rudiments of the Anatomy and Physiology of the Human Body,* &c. By T. J. Armiger, &c. &c. London, 8vo. pp. 52, 1816.

† *Traité d'Anatomie Descriptive, rédigé d'après l'ordre adopté a la Faculté de Médecine de Paris.* Par J. Hippol. Cloquet, Docteur en Médecine, &c. &c. II. Parties. 8vo. pp. 1118. Paris, 1816.

The following arrangement, which M. Cloquet has adopted, is that of the French anatomists of the present day. The whole of anatomy is divided in three classes; the *first* of which comprehends—1. the organs of loco-motion; 2. the organs of the voice; and, 3. those of sensibility: the *second*, 1. the organs of digestion; 2. the organs of respiration; 3. the organs of circulation; 4. the organs of absorption; and, 5. the organs of secretion: whilst the *third* is altogether confined to the organs of generation in the two sexes. The advantages of such an arrangement are sufficiently obvious, particularly to the student, whose time should be chiefly spent in the dissecting room. But, although we are willing to admit that a correct, and, if we may be allowed the expression, a mathematical knowledge of the organs, and their relative connection, in point of situation, with each other, is absolutely requisite for the surgeon, yet, we have never been convinced that any disadvantage can result from the introduction of physiological and pathological illustrations into Treatises on Anatomy.

The work of M. Cloquet, however, is not a mere dry description of the forms of the organs, their connections, and positions; but, in preliminary remarks on each division of the arrangement, the structure of the parts to be treated of, and even their general chemical composition, is examined. Thus, after describing the physical qualities of *bone*, we are informed that it is composed of two elementary parts—an organized parenchyma formed of gelatin, which, with fatty matter, constitutes more than one half of the weight of bones; and an inert, salino-terrene matter, that fills the cells and meshes of the parenchyma*. *Cartilage* and *ligament* are formed of cellular tissue, filled with a gelatinous pulpy matter. The *synovial fluid* is of greater specific gravity than water, with which it readily mixes: it froths when agitated, and is thready and consistent like albumen; the existence of which in it is demonstrated by the action of caloric, alcohol, and the mineral acids. It also contains fibrine, soda in a free state, and muriate and carbonate of soda. *Muscle*, M. Cloquet remarks, may be regarded as a kind of reservoir of fibrine, to which it owes its contractility, and which is enclosed in the parenchyma of this species of organ, in the same manner as calcareous phosphate is enclosed in that of bone. The chemical elements of muscle are fat, albumen, much fibrine, osmazom*, phosphate and muriate of soda, phosphate of lime, oxyd of iron, azote, hydrogen, and oxygen. *Cellular tissue* is an assemblage of very fine moist, whitish plates, and filaments, which interlace and form irregular cells that communicate with each other. With such remarks M. Cloquet prefaces his description of each particular set of organs. The simple anatomical details are full, and extremely perspicuous: and the execution of the whole work authorizes us in regarding it as a valuable addition to the elementary treatises on the important subject of which it treats.

---

* Contrary to his resolution of adhering strictly to pure Anatomy, M. Cloquet hazards the following pathological hypothesis: "Si on verse de la potasse dans l'acide où un os a été en partie dissous, la matière terreuse se précipite; enfin quelques maladies, le cancer entre autres, rendent les os très-fragiles, à cause de la proportion relativement plus grande de cette même matiere."—p. 11.

Notwithstanding the importance of an accurate knowledge of the anatomy of the body, in its healthy state, to every description of practitioners, yet, it must be allowed that, to the physician in particular, an acquaintance with the changes which disease produces is still more essential, adding certainty to their reasonings, and confidence in prescribing: but this undoubtedly implies a previous familiarity with the healthy structure of the frame. From the period, however, of Bartholin† to that of Baillie, although morbid anatomy has engaged the attention of some of the most illustrious men that the annals of medicine can boast of, a Morgagni, Lieutaud, Bonet, and Vicq-d'Azir, yet it may still be regarded, in some degree, as a province rich in many unexplored treasures; and, consequently, as every new work on the subject must excite a lively interest, we feel pleasure in being able to notice Dr. Cruveilhier's "*Essai sur l'Anatomie Pathologique*‡."

Dr. Cruveilhier has divided his work into three parts. The first part, which treats "of Pathological Anatomy in general," contains, besides some preliminary remarks and a sketch of the history of this branch of the science, four sections: the *first*, on mechanical injuries; the *second*, on organic transformations, productious, and degenerations; the *third*, on irritations, atonies, and gangrene; and the *fourth*, on fevers and the neuresis. The second part treats of "transformations and particular organic productions:" and the third part, "of organic changes connected with hernia." This latter part is also subdivided into two sections; the *first* of which relates to "hernia, the constituent parts of which have suffered no change in their organization;" and the *second* to "the changes produced on both the containing and the contained parts." The diseased affections treated of under these heads, are arranged in classes, orders, and genera. Thus the section on Mechanical Injuries comprehends ten classes: 1, wounds; 2, ulcers; 3, fistulas; 4. contusions which comprehend concussions; 5, lacerations and distensions; 6, fractures; 7, displacements; 8, the presence of foreign bodies; 9, aneurisms; and 10, vices of confirmation. It is unnecessary to go through the whole of the arrangement: from this specimen the extent of the subject embraced in the pages of Dr. Cruveilhier, may be readily imagined.

---

* This is a particular animal principle, coloured and soluble in alcohol, which Thenard discovered, and ascertained to be the substance which gives taste and odour to broth (bouillon).

† Thomas Bartholin published the first treatise which appeared on Morbid Anatomy in 1674, under the title "*Consilium de Anatomia practica ex cadaveribus morbosis adornanda.*" Hafniæ, 4to.

‡ *Essai sur l'Anatomie Pathologique en général, et sur les transformations et productions organiques en particular:* par Jean Cruveilhier, Docteur en Medicine, ancien Elève interne de l'Hotel-Dieu *de Paris, &c. &c.* 2 tomes. 8vo. Paris, 1816.

In point of execution, Dr. Cruveilhier's work is undoubtedly too succinct in details to be of much advantage to the student; and may rather be regarded as a well-arranged collection of memorandums for the use of the already-formed practitioner. Thus we may illustrate, by the following short paragraph, all that he advances on the subject of synovial cysts, which constitute the second genus of a sub-order, intitled "of cysts existing prior to the matter they contain."

"GENUS 11. *Synovial Cysts.* These are cysts that contain a ropy liquid, as limpid as synovia. They are observed only round the articulations of the hands, the feet, sometimes the knee, and along the sheaths of tendons. Some authors think that they are the consequence of the synovial fluid escaping at one point: but observations on the dead body demonstrate that these cysts have dense parietes, fibrous externally, and internally serous, formed in the cellular tissue which surrounds the true synovial cysts. The laceration of the cysts is the method of cure most generally adopted; but incision, excision, and even extirpation are also practised."

Dr. Nathan Young, of Edinburgh*, has published an account "of a singular malformation of the human heart†." The organ was about twice the natural size, for a man of ordinary stature: it weighed, when freed from the coagula and with its vessels cut short, twenty-eight ounces and forty-four grains. The auricles formed one extensive cavity, by the dilatation of the foramen ovale, which was open and measured three inches and a half in diameter. The cava and pulmonary veins were much enlarged, as were also the eustachian valve and the great coronary vein. The size and thickness of the pulmonary ventricle agreed with the size of the heart. "The ostium was two inches and half in diameter; the tricuspid valves were partially ossified and much thickened. The pulmonary artery much exceeded its natural size, and was larger than the aorta:" its semilunar valves were completely ossified. The parietes of the aortic ventricle were thicker than usual; its ostium was an inch and a half in diameter; the semilunar valves were a little thickened, but all the other parts were natural*.

---

* Tome i. p. 296. † *Journal of Science* and the Arts, vol. i. p. 19.

Considering the facts of the case, Dr. Young is induced to advance the following *queries.* 1. "What must have been the action of the heart in this case, so as to keep up that equable circulation which existed for such a length of time in defiance to the extensive malformations? 2. Does the morbus cœruleus depend on a mixture of venous and arterial blood? 3. What portion of venous blood is requisite? 4. Is it not more probable that the morbus cœruleus depends on languid circulation? 5. Is the ductus arteriosus generally found pervious in cases of the morbus cœruleus, in combination with an open foramen ovale? 6. Is it necessary that the ductus arteriosus and foramen ovale be open in the same subject to constitute this disease?"

On this query we may remark, that the foramen ovale is very frequently found open on the dissection of adults, in whom no symptoms have appeared during life that could have led to the suspicion of the existence of such an event. Dr. James Thomson, of Edinburgh, has endeavoured to explain this circumstance, by observing, that "as long as both auricles receive and discharge the same quantity of blood, no admixture to any extent can take place, even although the foramen ovale be very large; but when the right becomes either smaller or of increased strength, or the left is seized with what is called passive aneurism, a portion of the blood must go through to support the equilibrium†."

---

* The patient in whom this case occurred, was a labourer, forty-nine years of age. During the last eighteen years he had had repeated attacks of inflammation of the thoracic viscera: and an apoplectic attack, which had left a general sensation of numbness. He had a livid complexion; but no other symptoms of a diseased heart were perceptible, except the state of the pulse which was frequent, intermittent, and variable in frequency and strength. The temperature of the body varied from 97° to 101° of Fahrenheit: but he nevertheless frequently complained of coldness of the extremities. As he had laboured under eczema *mercuriale,* these symptoms were supposed to arise from *erethismum*: and he was accordingly treated with antimonials, opium, sarsaparilla, cinchona, and mineral acids. *Journal of Science,* Vol. 1, p. 49.

† *Edinburgh Med. and Phys. Journ.* vol. xii. p. 6.

6. Is it not probable that a slow circulation through the lungs, which must have taken place in this case, may give rise to superoxygenation of the blood, and hence the effect of admixture of venous and arterial blood be obviated. 7. Is there not an equilibrium in the action of the cavities of the heart, which in some cases of malformation compensates for natural structure, and which, as soon as it is subverted, gives rise to symptoms indicative of morbid structure? 8. What are the pathognomonic symptoms of this malformation, or complete dilatation of the foramen ovale, contracted ostium arteriæ pulmonalis, and extensive enlargement of the heart?"

No part of *Pathology* has been more elucidated by the great attention that has of late years been paid to morbid anatomy, than diseases of the heart. Among the dissections of that organ in a diseased state, which have been lately published, one of the most remarkable occurred in the practice of Dr. Thomas Spens. A large portion of the anterior surface of the heart was found covered with a loose flocculent matter, adhering at one or two points to the pericardium; and a large portion of the anterior of the parietes of the right ventricle was converted into firm whitish curdy matter, resembling that which is found in scrophulous tumours*. In a case detailed by Dr. Pearson†, the mitral valves were partially cartilaginous and ossified, and the semilunar valves indurated, so as to obstruct the passage from the left ventricle to the aorta, and occasion accumulation in the left heart."

Dr. Duncan, jun. has published the dissections of three cases of inflammation of the heart, or rather of its membranous coverings, one of which he regards as an "example of pericarditis, nearly as free from complication as it can occur‡." In this point of view, it would indeed be a record of great value; but we are of opinion, however, that neither the symptoms nor the dissection of the body after death authorize the observation; and that the case was a complication of pleuropneumonia and carditis. The dissection is interesting: "few or no adhesions were observable; nor was there any considerable effusion of serum into the sacs of the pleura. A little to the right of the sternum there extended from the lower part of the left side a dirty chocolate-coloured bag, which, on being opened, proved to be the pericardium adhering to the lungs, thickened and much distended; also containing two pounds six ounces of perfectly formed pus." The inner surface of the pericardium,

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* *Edinb. Med. & Phys. Journ.* vol. xii. p. 192.

† Ibid. p. 195. ‡ *Edin. Med. and Surg. Journ.* vol. xii. p. 70.

"and that which is reflected over the heart. were thickly coated with a substance resembling 'condensed curds:' the substance of the heart was not otherwise altered, except that it was much paler than usual."

We cannot avoid condemning, *en passant*, such loose expressions as "few or no adhesions;" there must have been either some adhesions or none.

The instance of malposition of the stomach, which we published*, on the authority of Dr. Joseph Benjumeda, of Cadiz, is more curious than important; and the facts are scarcely sufficient to authorize the conclusion of the Spanish physicians, that it was a *natural* malposition.

We cannot close, more appropriately, this brief sketch of what has been done in anatomy, within the period which this Report embraces, than by noticing the history of the art, by Dr. Lauth, Professor of Anatomy at Strasburg†. The first volume only is yet before the public. The *first* book treats of the anatomy of the Egyptians, who, notwithstanding the assertions of some authors, and their skill in the art of embalming, had scarcely, in any degree, cultivated the art. The ancient Greeks and Romans were conversant with comparative anatomy, but had made but little advancement in that of the human body. The anatomy of Galen was of the same character: and it was not until the period of Vesalius, in 1545, that the art began to assume its more important feature, as displaying the structure of the body of man himself. In the middle ages scarcely any advancement was made: the writings of that period are defaced by the grossest errors: and, with a useless display of learning, in collecting the opinions of their predecessors, they examined and treated the subject itself in the most superficial manner. Dr. Lauth, in the *sixth* book, which relates to the Italian school, states, that although materials sufficient to form a system of pathological anatomy were collected in Italy, yet none was yet produced; and the work of Schrenk must be regarded as the first on that branch of the art. The volume concludes with several interesting biographical sketches of the most celebrated of the anatomists who are previously mentioned; and the manner in which the whole is executed, affords the best earnest of the value of those parts which are yet to come.

In *Physiology*, which always presents a wider and more inviting field of inquiry to the ingenious mind, several works of very considerable interest have appeared.

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* *Repository*, vol. v. p. 423.

† *Histoire de l'Anatomie*, par Thomas Lauth, M. D. &c. &c. *tome* i, 4to. Strasburg, pp. 606.

As regarding the subject in a general point of view, the most important work we have to notice is M. Majendie's *Elementary Treatise*[1], the first volume of which only is yet published. It contains what he terms the *relative functions*, the organs of sense, of understanding *(intelligence)*, of the voice, and of motion. The subsequent volume is intended to contain the nutritive and generative functions. The style in which this work is written is particularly pointed and perspicuous, and well calculated for its object, being intended for students. Its great merit seems to consist chiefly in the author not having thought it necessary to introduce all that he could copy from the other writers on the subject; but having confined himself to the detail of what he conceives to have been satisfactorily ascertained by others, or to be proved by his own researches. Respecting vision, the following are original remarks: 1. That the secretion of the Meibomean glands is albuminous, soluble in the tears, and not unctuous as has been hitherto described. 2. The sclerotic and choroid coats of the eyes of albino animals (such as rabbits and pigeons) being transparent, shew, in a very easy manner, images of objects on the retina, which, in other eyes, required a tedious and difficult dissection. He has also been enabled, by the aid of these eyes, in making some experiments by evacuating the aqueous humour, removing the lens, cutting away the cornea, or enlarging the pupil, to observe the effects of these operations upon the images of objects represented on the retina. He has also enlarged his researches on the organ of the voice, some of which (the uses of the epiglottis) have already been noticed by us[2]. In grave sounds, the ligaments of the glottis of a dog vibrated in the whole of their length, and the air was expelled through the entire extent of the glottis: in acute sounds these ligaments vibrated only at their posterior part, and the air was expelled only through the portion of the glottis which vibrated.

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[1] *Precis Elementaire de Physiologie*, par M. Majendie, &c. &c. 1 tome, pp. 326, Paris.

[2] Vide *Repository*, vol. v. p. 155. M. Majendie having investigated the nature of the action of the œsophagus in vomiting, has, in the Memoir to which we have referred, examined that organ in a state of rest, or nearly approximating to rest. He observed that the œsophagus has a vermicular motion, which extends, however, to two-thirds only of its length, the lower third being scarcely affected by it. This action ceases altogether when the eighth pair of nerves is divided. It is more energetic when the stomach is distended with food: and when that organ is compressed: and, even if the superior two-thirds be taken away, the remaining third, if the plexus of the eighth pair of nerves be not injured, when irritated is sufficient for the excitement of vomiting.

For further particulars we must refer our readers to the analysis of the work in our present Number. It is certainly an acquisition to Physiology, as there is no original elementary treatise in English on the subject, adapted for students; and Richerand's, which is filled with much dull doctrine that nobody believes nor ought to believe, is almost the only treatise accessible to the English reader.

Although two centuries have nearly elapsed since the splendid discoveries of Harvey ascertained the course which the vital fluid pursues through the animal frame, yet, physiologists are still divided in opinion as to the causes by which it is moved in that course. One set maintain, that the projectile power of the heart, aided by the vibrations of the arteries, is perfectly adequate both to transmit it to the extreme vessels, and from these to return it back again to the heart: whilst another set, with whom more recent physiologists agree, contend, that the impetus of the heart cannot carry it beyond the arterial system; and that its motion in the veins " arises from causes distinct from those by which it had been produced in the arteries." Dr. Carson has entered upon the investigation of this subject with the true spirit of philosophical inquiry, and published the results in a work which we have now to notice[1]. It is divided into three parts: " 1. An enumeration and estimate of the causes which have been supposed to promote the circulation of the blood. 2. The developement of other causes which appear to contribute to the motion of the blood, and which, added to the preceding, will, it is presumed, be found adequate to the effect; and, 3dly, an application of phenomena."

The first part does not demand any particular notice.—After describing, perhaps in too detailed a manner, the various organs which compose the circulating system, Dr. Carson examines the theories proposed by Harvey[2], Weitbrecht[1], Muschenbrock[2], Dr. Darwin[3], Dr. Wilson[4], John Hunter[5], and others; and proves in a clear and satisfactory manner, the inadequacy of the causes enumerated by these celebrated physiologists, to produce the whole motion of the blood: hence, in the second part, he proceeds to point out the causes which, in his opinion, are capable, in co-operation with the former, of completing the circle of the vital fluid. Dr. Carson, in advancing his theory, first investigates the structure of the heart itself, and concludes, that "there arises, from the circular direction of the fibres of the heart, and the arched forms of its walls, a very remarkable property, that of dilating or expanding its cavities by the simple relaxation of its fibres." (p. 97) The auricles differ in structure as well as in appearance from

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[1] *An Inquiry into the Causes of the Motion of the Blood; with an Appendix, in which the Process of Respiration, and its Connection with the Circulation of the Blood, are attempted to be Elucidated.* By James Carson, M.D. Physician to the Workhouse. 8vo. pp. 250. London.

[2] After Harvey's opinion, " that the auricle is dilated by the force of the blood returning to it from the veins," was admitted, the following query naturally suggested itself: " Whence does the blood, at the root of the vena cava receive such a quantity of motion, as is not only sufficient to carry it with great velocity along the channel

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of the vein, but, in addition, to empower it to resist the contraction of the auricle, and to distend the cavity of that chamber? Dr. Harvey, and many of his followers contended that this power is derived from the left ventricle of the heart, extending through the aortic and venous systems back to the right auricle."—Vide *Inquiry*, p. 25.

[1] Weitbrecht was a physician in Petersburg. He first advanced the opinion, which has since his time been generally admitted, that the propelling power of the heart alone cannot produce the dilatation of the whole of the arterial system; and that the circulation is kept up in the arteries, by the jet of blood sent from the ventricle acting on their irritability, and also enlarging the portion of their cavity, into which it is thrown, so as in both cases to occasion a contraction and recoil upon the blood, and restore to it the impetus that had been expended in dilating the artery. But the *vis a tergo* of the extreme arteries is inadequate to continue the motion of the blood through the veins to the heart.

[2] Muschenbrock's theory was founded on the idea, that the blood-vessels constituted "a cone, with the base at the heart, and the apex formed by the extreme vessels." He contended, "that the force transmitted from the heart and arteries, would be in proportion to the square of the diameter of the small vessels, which were supposed to constitute the apex of the cone (and therefore in them smallest) multiplied into the distance of the section from the part."—*Inquiry*, p. 55.

[3] Dr. Darwin maintained, that the veins take up the blood from the arteries by absorption, as a sponge imbibes water, but did not inquire into the cause of this absorption.

[4] Dr. Wilson explains the motion of the blood in the veins on the supposition, that the heart dilates, owing to a property inherent in it, and produces a vacuum, "by which the blood is pumped from the veins into the heart."

[5] J. Hunter's theory was founded on his doctrine of the vitality of the blood.

the ventricles; and there is no communication of substance between them: "for if the heart be boiled for a proper time, the auricles will drop off, or be easily separated from the ventricles, without any rupture of muscular fibres." Much stress is placed, as a preliminary remark, on the ordinary condition of the lungs, which the author conceives is an unnatural state of expansion, commencing the first moment the infant breathes; and the power which produces this state is the weight of the atmosphere. But there is a powerful inherent disposition in the lungs to collapse, and to draw after them the parts which form the internal walls of the chest, of which the external surface of the heart is regarded as constituting a part.

On these observations chiefly Dr. Carson imagines, that the dilatation of the heart, after contraction, is "to be ascribed to the form and position of its fibres, in consequence of which, simple relaxation is accompanied by a certain degree of dilatation; but particularly to the supporting of a part of the atmospherical pressure that would have rested upon the convex surfaces of the heart or its envelope, by the resilient or collapsing effort of the lungs." By the dilatation thus produced, the valve "at the roots of the arterial trunks," owing to external pressure become closed, and the blood cannot return; but the passage from the auricles into the ventricles being open, the blood, by which the former were dilated, rushes in to occupy "the space left by the dilating ventricles." The communication between the auricles and the venous trunk being now opened, the blood in these trunks being relieved "from a part of the ordinary pressure in the direction of the heart, necessarily takes the course where it meets with the least resistance." The heart, therefore, acts at once in a two-fold capacity. By the contraction of the ventricles, it propels the blood through the arteries; and by the dilatation of the auricles, it pumps it from the veins. It is, at the same time, a forcing and a suction pump." But this power alone would be insufficient for raising the blood through the veins to the heart; hence the aid *vis a tergo* of the arteries is required; and by the co-operation of these two powers, it is moved in a continued stream from the remotest parts. Thus the motion of the blood in the veins "is produced by the force of the heart and arteries urging it behind; by the abstraction of a share of the atmospheric pressure from it in front, in consequence of the resiliency of the lungs, interposing its [their] influence in the intervals between the contractions of the heart; and by the gravity, which is rendered available in this case by the projection of the arteries and the diastole of the heart." (p. 151.)

Such is the outline of the theory of Dr. Carson, on the merits of which, as we have not yet had sufficient time to reflect, we forbear from giving any decided opinion[*]. The *third part* contains many interesting observations, in explication of phenomena, which our limits prevent us even from noticing. An appendix also is added, advancing some interesting observations on respiration, and the action of the lungs.

It has been a question in the physiology of parturition, whether there is such a circumstance as a *spontaneous evolution of the fœtus*, "or in the event of the arm being the presenting part, whether a child, either living or dead, can be brought into the world by the efforts of Nature." Experience has proved that the efforts of Nature are, in some such cases, adequate to the birth of the child; but a difference of opinion exists as to the mode by which it is accomplished: and as this is a question which has been connected with the practice of midwifery, the solution of it is of considerable importance. This operation of Nature, the spontaneous evolution, was first pointed out by Dr. Denman, and he founded upon it a practical rule, that when a child cannot be turned without some danger to the mother, the chance of an evolution should "set our minds at ease," and induce us to leave the case to Nature. Dr. Douglas combated these opinions; denied that any *evolution* occurs; that a *recession of the extremity* is impossible; and maintained that the child is simply expelled in a doubled state, by the efforts of the uterus, as in ordinary labours. In an *essay* upon this subject[†], Dr. John Kelly has freely criticised the opinions of both these eminent men. He admits that the evolution may occasionally occur, but it produces no recession of the presenting part into the contracting uterus, and gives the following explanation of the mode in which it is performed:

"The inferior extremities are forced gradually lower, until they become, as it were, fixed upon a plane, with the body of the child: its position in the uterus from being perpendicular becomes horizontal, the head resting, I will suppose, on the spine of the *pubis*, and the interior extremities at the *sacrum*. It is when brought into this situation by the repeated action of the uterus, and not sooner, that the *fœtus* can turn upon its own axis; nor can it do so then, until the action of the uterus has ceased: so long as this continues, it is physically impossible the evolution can occur; but the child being thus placed, by the pains, in a position favourable to its evolution, the superior extremity goes up the moment the *uterus* ceases to press it down, or, in other words, at the termination of a pain." (p. 11.) But although Dr. Kelly admits that spontaneous *evolution* may in this manner take place, yet, he contends, that it may frequently be prevented by occurrences connected with the form of the fœtus. Thus, as the axis of the child's body ("as tending to an evolution,") is a line passing from the *umbilicus* to the opposite *dorsal vertebra*, a due proportion of every part of the fœtus is essential to an evolution: and, therefore, if the head be unusually large and weighty, none will ensue. Evolution may, also, be prevented by variations in the natural "relative dimensions of the uterus and the child;" by that state of the uterus which has been denominated its *permanent contraction*; by deformity of the pelvis, and several other causes. The practical inferences, which Dr. Kelly very properly draws from these observations, may readily be conceived.

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[*] One passage, however, we feel inclined to extract: "It follows, from what has been stated, that this earth is not habitable by animals above a certain magnitude; and, that, as the weight of the column of fluid, contained by the animal machine, approaches nearer to a balance with the weight of the atmosphere, the circulation through the machine must be more languid. Little animals appear to be best adapted to the atmosphere of high mountains; accordingly we find that animals which live upon very elevated mountains are less than those of the same species which dwell upon the plains." Page 203.

[†] *An Essay upon the Spontaneous Evolution of the Fœtus*, by John Kelly, M. D. 8vo. pp. 60. Dublin, 1816.

Connected with the œconomy of fœtal existence, in another point of view, we have to notice the observations of M. Dutrochet "*on the Envelopes of the Fœtus**." This author, with unwearied care and a scrutinizing eye, watched the process of incubation through all its stages. On the second day, he observed on the surface of the yolk a vascular areola, in the centre of which the first rudiments of the chick were perceptible. The whole of this yolk, or vitellus, is surrounded by two non-vascular membranes, which M. Dutrochet denominates the first and second epidermis, and under which is the vascular membrane that Haller discovered to be an appendix of the bladder of the fœtus. It is not until the fourth day of incubation, that the vitellus, which enlarges by degrees, bursts its first envelope and casts it off. In the course of the same day, the membrana allantoidis appears, proceeding from the abdomen of the chick by an opening situated under the median line. This allantois is filled with a yellow fluid, which is urine: it quickly developes itself, bursts the second epidermis which encloses it; and, attaching itself to the exterior membrane of the egg, continues to extend itself, sliding between that membrane and the albumen; so that on the 10th day of incubation, the whole of the egg is found enveloped by the allantois thus expanded, which forms new coats to the egg that were not in existence at the commencement of incubation. The exterior, which is the chorion, performs the function of respiration; the second is extremely delicate and analogous to that in the fœtus of the mammalia, which Haller denominates middle membrane (membrane moyenne). M. Dutrochet proves, contrary to the opinion of *Haller*, that the vitellus is not originally surrounded by its vascular tunic, but that this membrane, which is an appendage of the intestine, covers progressively the yolk, in the same manner as the albumen is enveloped by the allantois. M. Dutrochet has also discovered that the vitellus possesses a herniary sac formed entirely from the peritoneum. This sac, which is drawn into the abdomen towards the end of incubation, receives some extremely minute vessels, that had escaped the notice of former observers, and which arise from those of the vitellus. From these observations it appears that the chick both respires from the first moment of its existence, and is nourished exclusively by the intestinal membrane of the yolk; and afterwards respiration is carried on by the membrana allantoidis: hence there are two phases, as it were, in the respiration of the chick.

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* We gave a short notice of M. Dutrochet's Memoir in our last Retrospect. We have not seen the original; and our information regarding it is taken from the Report of M. Chaumaton, made to the Societé Médicale d'Emulation, published in the *Journal de Médecine,* tome xxv. p. 89.

The eggs of reptiles, M. Dutrochet observes, closely resemble those of the chick, except that the egg of the serpent contains no albumen. The egg of the viper presents several remarkable phenomena: it continues in the oviducts until the young are hatched; and towards the middle of gestation, which continues about four months, the exterior membrane of the ovum disappears, and the chorion remains naked in the oviducts, to which it slightly adheres; so that probably by this means the fœtus derives some nourishment from the mother.

M. Dutrochet asserts, that both Swammerdam and Spallanzani have fallen into great mistakes regarding the ova of the frog genus. He has repeated the experiments of the Italian Naturalist on a great number of species, and is convinced that the produce of generation is a true egg. He has also proved, that the metamorphosis of the tadpole does not happen as Swammerdam has stated, by the casting of the skin which covers the fore legs, but these, furnished with their proper skin, pierce the membrane which covers them, and pass through it like the arms in a cuirass. In a few days the rent skin again adheres at the shoulders. The skin which covers the body and the hind legs of frogs is not the same which covers their fore legs: hence M. Dutrochet regards adult frogs as animals retaining the amnios during life.

M. Dutrochet draws an analogy between the ova of the mammalia and of birds. He regards the deciduous membrane of Hunter as analogous to that lining the shell of the eggs of birds; and under it, as in the egg, is the chorion, which is also an appendix of the bladder. The interior epidermis, which extends with the mucous membrane of the bladder of the fœtus, and is in contact with the urine, has been described by all anatomists under the name of allantoid. M. Dutrochet has found in the fœtus of the sheep, as well as in that of birds, a middle membrane covering the amnios without adhering to it; and he has observed the umbilical vesicle adhering to the lateral part of the small intestine, in the same manner as the vitellus adheres to the intestine of the chick. This vesicle is furnished with two long tubular horns, which might be erroneously taken for chalazes. In the earlier stage of the existence of the embryon, there is no placenta, and the embryon appears to be nourished by absorbing the fluids secreted by the mother; but as soon as the chorion begins to redden in the places where it is pressed by the tuberosities with which the uterus of the sheep is furnished, these red spots become the rudiments of placentas.

Connected with the subject which forms the labours of M. Dutrochet, are the observations of Mr. Ireland, on the early changes in the Rana *paradoxa* of Linnæus, or the Surinam frog*. In the tadpole state this animal resembles a fish; but on being narrowly examined, two small legs are perceived immediately behind the head. In a fortnight these are evolved, and the body of the animal enlarges: in three weeks the fore legs appear, and the head becomes very distinct; the animal acquires great activity, and requires frequently to ascend to the surface of the water to respire. This necessity for supporting respiration in the air, continues until about the sixth week, at which time the tail sloughs off, and is partly absorbed, and the animal becomes a perfect frog. Sir Everard Home, who has anatomically examined these animals, found, that before their transformation, there are three gills on each side, and the lungs remain " in a very small form in the posterior part of the abdomen behind the liver:" in this state also nearly the whole cavity of the abdomen is filled with fat; but as the animal becomes older, a considerable diminution of the capacity and the length of the intestines take place. The subject certainly well merits further investigation.

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* *Journal of the Sciences and the Arts,* vol. i. p. 54.

Dr. Wilson Philip continues his efforts to illustrate the functions of the nervous system. In a paper read to the Philosophical Society in January last, an account of some experiments on the nervous influence in secretion are detailed. He has demonstrated that the function of secretion is altogether dependent on nervous influence; for when this is interrupted, secretion is at an end. No digestion took place in the stomachs of rabbits when the eighth pair of nerves was divided: but efforts at vomiting, and a state of dyspnœa succeeded, which at length produced suffocation. Dr. Philip has also endeavoured to ascertain, by experiment, that the galvanic influence, if not the same as the nervous, is at least capable of supplying its place: a very curious fact, if it be borne out by further experiments. He regards it likewise as proved, that the ganglia communicate to the nerves, which proceed from them, the general influence of the brain and spinal marrow: and that the heat of animals is owing to nervous energy.

Such is all that we have to notice in this department of Medical Science. The discoveries and improvements in it, if not extensive, rest upon a firmer basis than physiological facts have hitherto done: and with the aid which chemistry and galvanism afford to investigations of this description, it is not easy to anticipate the extent to which the physiologist may proceed in developing the most intricate functions of the animal frame.

CHEMISTRY.

The march of this division of Science is still uninterrupted; and brilliant discoveries may be said to be daily effected, which the most sanguine imaginations, half a century ago, could scarcely have anticipated. Medicine, of course, shares in the advantages its advancement produces, and hence the necessity of the retrospective view which we are about to take of its progress, since the period of our last Report.

The value of the atomic theory, in promoting a more perfect knowledge of the general principles of chemical science, is daily becoming more conspicuous. Dr. *Prout* having advanced an opinion, that "the specific gravity of any body may be obtained, by multiplying the weight of its atom, by half the specific gravity of oxygen gas," Dr. *Thomson* has published some interesting observations, tending to exhibit, "at one view, the very simple relations which exist between the specific gravities of gaseous bodies, and the weight of their atoms*." He has divided all the substances which can be exhibited in a gaseous state, and the weight of the atoms of which are known, into three sets, and exhibited them in a tabular form*, by which it appears, that "the weight of the atom is either equal to the specific gravity of the gas, or twice that weight, or four times that weight:" hence, as the ultimate atoms of bodies differ in their weight, "the ratio of their weights may be determined by the specific gravity."

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* *Annals of Philosophy,* vol. vii. p. 343.

It has been generally regarded as a law in the doctrine of affinities, that no chemical action takes place, unless one or both of the bodies brought together be in a state of solution; yet, Berthollet's theory admits "that a chemical combination is produced, by the trituration of dry bodies together." Mr. H. F. Link has submitted this to the test of experiment, and published his observations in Schweigger's Journal†. His experiments were made on muriate of lime, triturated with sul-

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* Supposing the specific gravity of a volume of oxygen to be 1·, gaseous bodies may be arranged in three sets, as follows:—

Set First.—Bodies having the weight of their atoms equal to the specific gravity of their volumes.

	Sp. gr. Oxygen being 1·	*Weight of an Atom.*
Oxygen	1·000	1·000
Olefiant gas	0·876	0·876

Set Second.—Bodies having their weight of their atoms twice the specific gravity of their volumes.

	Sp. gr. Oxygen being 1·	*Weight of an Atom.*
Phosgene gas	3·095	6·190
Chlorine	2·250	4·500
Sulphurous acid	2·000	4·000
Cyanogen	1·621	3·242
Nitrous Oxide	1·375	2·750
Carbonic Acid	1·374	2·748
Sulphuretted hydrogen	1·062	2 124
Sulphur	1·000	2·000
Azote	0·875	1·750
Carbonic oxide	0·875	1·750
Steam	0·5625	1·125
Carburetted hydrogen	0·4995	0·999
Carbon	0·375	0·750
Hydrogen	0·0625	0.125

Set Third.—Bodies having the weight of their atoms four times the specific gravity of their volumes.

	Sp. gr. Oxygen being 1·	*Weight of an Atom.*
Hydriodic acid	3·986	15·944
Muriatic acid	1·1557	4·623
Nitrous gas	0·9375	3·750
Hydro cyanic acid	0·8433	3·3732
Ammonia	0·53125	2·125

† *Vol.* xiv. p. 193. There is a translation of this Paper in the *Annals of Philosophy*, vol. vii. [illegible] 426, from which we quote.

phate of copper; crystallized acetate of lead, with anhydrous sulphate of copper; acetate of lead, with burnt alum; and several other similar salts, in none of which decomposition was affected, until water was poured on the mixture. Litmus, dried by heat, underwent no change of colour, when triturated with succinic acid; even when alcohol was poured on the mixture, it did not become red until the spirit was evaporated, and then the change was effected by the alcohol facilitating the absorption of moisture from the air. But when sulphur was triturated with phosphorus, the two bodies united into a yellowish liquid, evidently the consequence of the heat evolved during the trituration.

The following are the conclusions which Mr. Link draws from his experiments:

"1. The trituration of anhydrous bodies produces no chemical action. 2. But it takes place, when one or both bodies are soluble in the liquid poured upon them. 3. It takes place equally, when one of the bodies only is soluble in the liquid poured on the mixture. 4. The water of crystallization acts as free water; but the moisture of the atmosphere acts only when it is absorbed by one of the triturated bodies. 5. The consequence of the decomposition has no effect on its success. It is the same thing, whether the body produced by the decomposition be soluble or not. What, therefore, is termed decomposing affinity, might be rejected. The reddening of tincture of litmus is an action of acids depending entirely on the presence of water. There are chemical compounds, which are formed entirely in consequence of the heat evolved by trituration."

In the combination of bodies, caloric is generally evolved, and the capacity of compounds for heat is consequently regarded as less than that of their components. Gay Lussac* has stated several cases, in which the compounds retain more heat than the components. Thus, a saturated solution of nitrate of ammonia, at the temperature of 16°,3, (centigrade,) and the density of 1,302, being mixed with water, in the proportion of 44·05 to 33·76; the temperature of the mixture fell to 4° 95, and its density was found at the temperature of 16° 3, to be 1·159, whilst the mean density is only 1·151. The chlorine of azote, discovered by M. Dulong, gave out, when decomposed and reduced into two simple bodies, chlorine and azote, both heat and light: and the same circumstance occurs, when iodine of azote is reduced into iodine and azote.

As one of the laws of combination, also, it has always been understood, that a metal must be in a state of oxydizement, in order to be united with an acid. According to M. Dulong, however, there are some exceptions to this rule: thus he conceives, when oxyd of zinc, or of lead, is combined with oxalic acid, and the compound dried, the hydrogen of the acid combines with the oxygen of the oxide, the result is, a combination of *carbonic acid* and the *metal*[*]. This is an opinion, however, in which we cannot concur, until we have either an opportunity of examining the circumstances on which it founded ourselves, or it shall be confirmed by others.

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* *Annales de Chimie et de Physique,* tome i. p. 214.

M. Vogel has added some interesting facts to the few already known respecting the action of the solar rays, in regulating chemical combinations. He found, that ammonia and phosphorus, which do not act upon each other in the dark, when exposed to the light, combine intimately into the form of a black powder, and emit phosphoretted hydrogen gas. Phosphorus and potash are affected in nearly the same manner. The different rays, however, have different degrees of influence: the red, for instance, produces no effect on a solution of corrosive sublimate in ether; but a mutual decomposition is produced by the blue rays and a full light[†]. We, several years ago, remarked the effect of light, in altering the characters of resinous and other vegetable powders.

In our last Retrospect, we noticed the Experiments of Dr. Coxe and Mr. Daniel, on crystallization. A very curious memoir on this subject, as far as it relates to earthy and metallic crystals, has been drawn up by M. Methuon; a report on which was read before the Geological Society, on the 16th February last, by Dr. Granville[‡]. In this Memoir, M. Methuon asserts, that he has ascertained the mode, in which *earthy* and *metallic* crystals, not of a saline nature, are formed; and describes an apparatus, by which such crystals may be artificially obtained, in very abundant crops. The following is the author's theory:

"Crystals, according to him, are not the immediate consequence of undisturbed solution or fusion; but the produce of a peculiar decomposition of amorphous crystallizable masses, the particles of which arrange themselves, during decomposition, according to certain laws of attraction; the process being carried on in the dry way, and in the air." The first circumstance which led M. Methuon to form this opinion, was, his having accidentally observed, about twelve years ago, in Elba, on a block of *argillaceous schistus with pyrites*, which was forming the base of a large mass of sand stone, projecting from the side of a mountain, several capillary crystals of alum, from half to a quarter of an inch in length, covering its superior surface: both the top and sides were in a state of decomposition; and there was some dust between the crystals, which he blew off, and observed, "that the wind had previously scattered some of it around the stone as it lay on the earth." M. Methuon almost immediately seized the hint from Nature, sheltered the stone, paid it frequent visits, and was delighted to observe the crystals enlarge so much, that in two months they were nearly double the size: the decomposing matter of the stone was also much augmented.

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[*] *Report of the Royal Institute of France*; vide *Philosophical Magazine*, vol. xlvii. p. 890.

[†] *Cuvier's Report on the Class of Mathematical and Physical Sciences of the Royal Institute of France*, for 1815.

[‡] *Dr. Granville's* Report is published in the *Journal of Science and the Arts*, vol. i. p. 123.

This dry formation of crystals of alum made a strong impression on M. Methuon; he conceived, that the alum was the immediate effect of decomposition; "that a portion of sulphur from the pyrites," (contained in the rock) "passed into the acid state, by means of its contact with the atmospheric air; and that this acid, combining with the argil, formed the crystals of alum." He endeavoured to imitate the process of Nature, and succeeded. From what he observed, he concluded, "1st. That crystals begin to form at their summit, edges, and solid angles. 2. That the matter serving to form the crystals, is in the state of a solid mass before, and continues in that same state during the whole process of crystallization. It may be called crystallizable matter. 3d. That crystallizable matter is that which has filled, by infiltration, the chasms and clefts of mountains, and the cavities of rocks; which composes the veins, the stalactites, and the staglamites; and, in general, all that which constitutes accidental formations found in blocks, nodules, &c. within large masses."

Upon these facts and conjectures, M. Methuon constructs his crystalligenous apparatus: he forms a bed of loose earth, an inch thick, obtained from the decomposition of the stone, in which the crystallizable matter is found, and raises an edge round it, one-third of an inch in height. On this he disposes balls made of the same earth, on which are placed various solid pieces of *crystallizable matter*, or *crystalline matrix;* on which again other balls are disposed, supporting other pieces of crystallizable matter, so arranged as not to touch each other. The whole is next made solid, by the introduction of balls into the interstices, and the apparatus surrounded by a wall of bricks, laid singly on each other, in a way to admit a free circulation of air. Every two or three days the apparatus is watered, to keep it slightly humid; and a temperature maintained equal to that of the internal parts of the earth. After a certain lapse of time, the crystallizable matter is found to present distinct and beautiful crystals, of the substances employed.

However contrary to the already-known laws of crystallization, these results are, yet, we are informed, various specimens, thus produced, have been sent to France, and some are on their way to England. The subject is certainly not less interesting than it is extraordinary*; and every one who reads the statement of M. Methuon, must feel extremely anxious to know the results of his more recent experiments†.

Iodine.—Gay Lussac still pursues his investigations into the properties of this substance. In some observations on "the combinations formed by iodine and chlorine‡, he condemns Sir H. Davy for employing two names to designate *Iodic acid*, without water, and combined with water; and conceives that the term, Iodic acid, should be applied indifferently in both cases; on the ground, that the water does not change the properties of the acid: and when requisite, the adjectives *anhydrous*, or *anhydroxuretted*, or *hydroxuretted*, will determine the state of the acid. Gay Lussac proposes the latter term for acids, alkalies, and all bodies combined with water in a definite proportion; because *hydrate*, which is the term now generally employed, implies, that the alkali or other body is combined with water, so as to constitute a salt, as if it were united with an acid. If the elements of iodic acid are intended to be designated in the name, it should, strictly speaking, be named *oxyiodic*; but, for several reasons, it is preferable to retain the name *Iodic*.

Phosphorus.—M. Dobereiner has suggested, that this substance, which has always been regarded as a simple combustible, is, like sulphur, a hydrine. This opinion is founded on the following experiments. If three parts of iodine, and one of phosphorus, both very dry, be heated together in a retort, light is extricated at the instant they unite, hydro-iodic acid evolved; and a brilliant brownish red substance remains in the retort, which is persistent in the air; but, by a strong heat, burns, and gives out vapours of phosphoric acid. As the combination of hydrogen and iodine produces hydro-iodic acid, and as neither iodine nor phosphorus contain water, it is probable that the hydrogen takes its origin from the phosphorus, and the reddish brown residue is dehydrogenated phosphorus*.

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* Mons. Gillet de Laumont, from whom Dr. Granville received the Memoir of M. Methuon, writes, "l'auteur du Mémoire sur les cristaux factices est un homme non capable d'en imposer: mais qui n'a peut-être pas touts les connoissances chimiques nécessaires pour bien exposer ce qu'il a fait, et la théorie qu'il en deduit." Vide *Journal of the Science*, p. 123.

† We have been informed by Dr. Granville, that M. Methuon has recently obtained crystals of blue carbonate of copper, from and on the Gangue, at Chessy, near Lyons; specimens of which have been sent to Gillet Laumont, and one is on its way to Dr. Granville in London. They have been obtained in the abovementioned method.

‡ *Annales des Chimie et de Physique*, tome i. p. 170.

The Chevalier Sementini has succeeded in combining phosphorus and potash, so as to form a phosphuret. It was obtained by dissolving phosphorus in a saturated alcoholic solution of potash. The solution was not complete; scales, possessing some brilliancy and covered with a red powder, remaining undissolved; but these dissolved in water, and left the red powder, which, on being treated with oxymuriate of potash, gave phosphorous acid gas, carbonic acid gas, and carbonate of potash. The liquids, when evaporated, yielded phosphuret of potash, in the form of a white opaque mass, which, when strongly heated, burnt with a yellow flame.

The chief object of the Chevalier, in procuring this preparation, was, to enable phosphorus to be exhibited as a medicine, without the inconveniences resulting from the direct use of the substance†.

METALS.—We have little to notice on this class of bodies.

Platinum.—A new combination of this metal has been discovered by Mr. Davy, of the Cork Institution, to possess fulminating properties; it explodes by a moderate heat, emitting light and gaseous products, and leaving metallic platinum. This substance is ignited at an ordinary temperature in ammoniacal gas, and in liquid ammonia it evolves a large quantity of gas. When it is touched with alcohol, a slight crackling noise is produced, and it burns with a red flame‡. Dobereiner says, that platinum is oxidized by melting on it nitrate of potash or of soda: the oxide being of reddish brown colour, almost of the metallic lustre, and completely soluble in sulphuric acid.

Iron.—Berzelius having contended that there are two oxides of iron only, the first containing 29·5, and the second 44·25 per cent. of oxygen; Gay Lussac, in a series of experiments on the oxidizement of metals, has demonstrated the existence of an intermediate oxide, in which the proportion of oxygen is 37·8§.

Arsenic.—Professor Fischer, of Breslau, has ascertained, that the solubility of oxyd of arsenic in water, is owing to one part of it becoming acidified by robbing the other part of its oxygen. The insoluble part always assumes a dirty yellow colour*.

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* *Philosophical Magazine*, vol. xlvii. p. 214.

† The following is given as another method for obtaining the phosphuret: "Form a saturated solution of potash in water; add pieces of phosphorus; no reciprocal action takes place; but when highly rectified alcohol is added, a lively effervescence immediately takes place, proto-phosphuretted hydrogen gas is evolved in abundance," and the phosphorus dissolves, the affinity of the alcohol being essential for the formation of phosphuret of potash. *Bibliotheque Britonnique*, vol. lx. p. 424. *Annals of Philosophy*, vol. vii. p. 280.

‡ *Philosophical Magazine*, vol. xlvii. p. 397.

§ *Annales de Chimie et de Physique*, tome i. p. 33.

Manganese.—Gay Lussac, in the paper already noticed, admits the existence of only three oxides of manganese: 1. the protoxide, obtained by dissolving manganese in diluted sulphuric acid, and precipitating it by an alkali without the contact of air; 2. the deutoxide, obtained by calcining the peroxide, or the greater part of the salts of manganese; and, 3. the peroxide, which is found in nature, and may be formed by treating the two former with chlorine.

Dr. Thomson has published the following mode, which is Fischer's, as the best for obtaining the sulphate of this metal: "take one part of green sulphate of iron and four parts of black oxide of manganese; reduce both to powder, and mix them well together: then expose the mixture to a red heat in a crucible. The dry mass, when digested in water, lets a sulphate of manganese dissolve, which is entirely free from iron and copper†."

ACIDS.—Notwithstanding the rapid advances which have been made within these few years, towards the obtaining an accurate knowledge of these substances, so essential in the labours of both the pharmaceutical and the general chemist, yet, there is still much to be learnt regarding the sources and qualities of many of them; whilst some, which have either been confounded with others, or have altogether escaped attention, are brought to light, and the nature of their properties investigated. Hence they are always interesting objects of inquiry.

Sulphuric Acid.—An error in calculating the real quantity of the efficient principle in any chemical menstruum, may lead to the most erroneous conclusions. Mr. Parkes has corrected a mistake of Vauquelin regarding the specific gravity of the *diluted sulphuric acid.* He found that the diluted acid of the specific gravity of 1·023, contains 3·069 of acid of the specific gravity of 1·842 and 96·931 of water, instead of 6·600 of acid and 93·400 of water‡, as stated by that celebrated chemist.

Muriatic Acid.—Nothing is of more importance to the chemical and pharmaceutical student than an accurate knowledge of the rationale of every process. We would refer our readers to Mr. Brande's explanation of the mode in which sulphuric acid and muriate of soda act upon each other in the formation of this acid||.

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* *Schweigger's Journal,* vol. xii. p. 155.

† *Annals of Philosophy,* vol. vii. p. 398.

‡ *Journal of Science and the Arts,* vol. i. p. 70.

|| *Repository,* vol. v. p. 256.

Nitric acid.—The quantity of sulphuric acid, directed in the last edition of the London Pharmaopœia for the preparation of this acid, is nearly twice as much as is necessary. "100 parts of nitre," Mr. Brande observes*, "contain 47 of potash and 53 of acid;" and sulphate of potash "contains 54 of potash and 46 of sulphuric acid; therefore, to convert 47 parts of potash, contained in 100 of nitre, into sulphate of potash, would require a fraction more than 40 parts of dry sulphuric acid." But as liquid sulphuric acid contains some water, 50 parts may be allowed. The acid thus obtained may readily be rendered colourless, by boiling for a few minutes to drive off the nitrous gas.

Nitro-muriatic acid.—Sir Humphrey Davy has determined, from a series of experiments, which were frequently repeated in order to secure their accuracy, that this acid "owes its peculiar properties to a mutual decomposition of the nitric and muriatic acid; and that water, chlorine, and nitrous acid gas are the results. The attractions which produce these results, appear to be the attraction of oxygen for hydrogen to form water, and that of nitrous gas for water." From the knowledge thus obtained of the nature of aqua regia, Sir Humphrey is of opinion, that "it does not oxidate gold and platina, but merely causes their combination with chlorine." The neutral salts it produces are, also, mere mixtures; not chemical compounds†.

Rosacic acid.—This name was given by Proust to the lateritious sediment occasionally deposited from morbid urine. Vogel has examined it with great care, and, from the results of his experiments‡, concludes, that it is not very different from uric acid, into which it is changed by nitric acid; and that the one may readily pass into the other by "no great effort of Nature in the animal system."

Uric acid.—M. Gay Lussac having analysed this acid, by means of oxide of copper, has ascertained, that the proportion of the volume of the carbon to that of the azote, the two principles of which it is formed, is in proportion of two to one, as in cyanogen ||. Professor Brugnatelli has found this acid, in combination with ammonia, forming the urate in the excrement of the moth of the silk-worm §.

Phosphoric acid.—Lavoisier concluded, from the results of many experiments, that this acid is a compound of two parts of

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* *Repository*, vol. v. p. 257. † *Journal of Science, &c.* i. p. 68.

‡ Vide *Journal de Pharmacie*, Janvier, 1816; and *Repository*, vol. v. p. 430.

|| *Journal de Pharmacie*, October 1815, p. 433; and *Repository*, vol. v. p. 61. § *Repository*, vol. v. p. 62.

phosphorus and three of oxygen; and, at a later period, Rose stated the proportions to be 100 phosphorus + 114·75 oxygen; or, when his numbers are corrected by a more accurate analysis of phosphate of lead, 100 of phosphorus and rather less than 100 of oxygen. Dr. Thomson has investigated this subject; and, by burning small quantities of phosphorus, verifying the results by the analysis of phosphate of lead, has ascertained, that the constituents of phosphoric acid are

Phosphorus	100
Oxygen	123·37

which "gives us 1·634 for the weight of an atom of phosphorus; 2·634 for that of an atom of phosphorous acid; and 3·634 for that of an atom of phosphoric acid."

This author has also shewn, that there are six phosphates with lime for a base; three with potash, and two with soda. "Ammonia resembles lime in its mode of combining with phosphoric acid." The most important of the earthy phosphates, is the earth of bones*, which the author denominates *osteo-phosphate.* He considers it as composed of 5 atoms of acid and 1 of lime; or, 100 parts, by weight, of acid, and 79·47 of lime.

Oxalic acid.—Some experiments, by M. Dulong, of Alfort, on the combination of this acid with some of the earths and metals, have induced the French chemists to suppose that it is either composed solely of carbon and oxygen, in proportions intermediate between those of the carbonic acid and the oxide of carbon, or it is a compound of carbonic acid and hydrogen. M. Dulong proposes to name the acid *hydrocarbonic.*

Carbonic acid.—This acid, in its gaseous state, has been discovered by Vogel, to exist both in urine and blood. To determine this, he put some recent urine or blood into a flask, to which was luted a bent tube, the open orifice of which dipped into a vessel containing lime water. This apparatus being put under the receiver of an air pump, on exhausting the air, a number of air bubbles issued from the urine, which proved to be carbonic acid gas, by rendering the lime water milky.

Acetic acid.—M. Schaedelin, an apothecary at Schelestat, has invented a new method of obtaining a very pure, colourless vinegar from fermenting together, for four months, 23 ounces troy of beech charcoal, two wine pints of yeast, eight wine pints of whiskey, and 41 wine pints of water†.

Malic acid.—According to Mr. Brande, a very large proportion of this acid is contained in Dalmatian wine‡.

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* *Annals of Philosophy,* vol. vii. p. 305.

† *Repository,* vol. v. p. 449. ‡ *Journal of Science, &c.* i. p. 136.

Mineral Waters.—Although almost all the mineral waters in Great Britain have been analysed, yet, many of them, from the improved state of analytical chemistry, might be again advantageously examined; and some recent analyses have given results very different from those formerly obtained, We have been particularly struck with this difference, in an analysis of the Tunbridge Wells mineral water, just published by Dr. Scudamore*, and one which was published in 1792†.

At Tunbridge, there is one spring only now in use, the temperature of which was found to be, uniformly, at all seasons, 50° Fahr. and its solid contents, according to the last analysis, 7·68 grains per gallon. The experiments of Dr. Scudamore appear to have been conducted with a degree of care, which authorize us to place confidence in the accuracy of his statements.

The following is a comparative statement of the conclusion drawn, from the analysis of the contents of a wine gallon of the water, by Dr. Babington, in 1792; and that of the same quantity by Dr. Scudamore:

In 1792.	gr.
Oxide of iron	1
Muriate of soda	0·5
Muriated magnesia	2·25
Sulphate of lime	1·25
	5

In 1816.	gr.
Muriate of soda	1·25
Sulphate of soda	1·47
Muriate of lime	1·54
——— of magnesia	·29
Carbonate of lime	·27
Oxide of iron	2·29
Traces of manganese	·44
Loss, &c.	·13
	7·68

The difference in the statement of the gaseous contents is not less remarkable:

A wine gallon, analysed in 1792, yielded	Cubic inches.
Carbonic acid	8·05
Azote	2·75
Atmospherical air	2·50
	13·30

A wine gallon, analysed in 1816, yielded	Cubic inches.
Carbonic acid gas	10·6
Azote	4·
Atmospherical air	1·4
	16·

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* *An Analysis of the Mineral Water of Tunbridge Wells, with some account of its Medicinal Properties,* by Charles Scudamore, M.D. 8vo. pp. 58. London, 1816.

† *An Analysis of the Medicinal Waters of Tunbridge Wells,* London, 1792.

Dr. Scudamore examined also the other mineral waters of Tunbridge, and gives the following table of the proportions of iron contained in them; and in the spring now used, at different seasons of the year:

	gr.
Parade spring, analysis of 1792, of oxide of iron, per gal.	1
Ditto, ditto, August and November, 1815	2·29
Ditto, ditto, March 26, 1816..............	1·63
Spring behind the Sussex Hotel, September, 1815.........	1·10
Tile House spring, near Tunbridge, November, 1815...	1·77

The medicinal properties of Tunbridge mineral * waters are well known on many occasions: they act most effectually when heated to 114°, which is the temperature of the Bath water, and the loss of gaseous matter, by heating it, is only 1·73 cubic inch.

M. M. Cadet and Deslauriers have lately analysed the mineral water of *l'Abbaye du Bal,* in the department of the Seine and Oise. It approximates to the waters of Pyrmont, Forges, and Spa†. One kilogramme, taken at the source, yielded of

	gr.
Acidulous carbonate of iron...............	0,5
——— carbonate lime.................	8
Sulphate of magnesia........................	2
Muriate of magnesia.........................	2
	12·5

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* Some Observations are added, by Dr. Thomas Thomson, on the water used for domestic purposes at Tunbridge Wells. He found it to be remarkably pure, containing 0·4 grain of foreign matter in 60 cubic inches; and rather less than one grain of oxide of lead in 20 gallons of the water, which is supposed to be taken up from the pipes in which it is conveyed to the town. Dr. Thomson adds, that Thames water does not take up any lead from pipes, owing to the large quantity of animal matter it contains: that, probably, hard waters containing sulphate of lime in solution may also be free from lead: with these exceptions, he holds it as a general fact, that all waters which pass through leaden pipes, or which are kept in leaden cisterns, contain small particles of carbonate of lead; but that these particles are present in too small quantities to be in the least injurious to the human constitution.—Dr. Thomson states, that he has found that the sulphuretted chyazate of potash is one of the most delicate re-agents for detecting lead. It occasions a white precipitate, consisting of small brilliant scales of considerable lustre, and quite peculiar in their appearance.

† *Journal de Pharmacie, Avril* 1816.

The following tabular view of the mineral waters of the High and Low Pyrenees, has not yet been noticed in this country, although the work*, from which it is extracted, was published in 1813.

	Temperature Reamur.	Carbonic acid gas.	Sulphuretted hydrogen gas.	Muriate of magnesia.	Muriate of iron	Muriate of soda	Muriate of lime	Sulphate of magnesia.	Sulphate of lime.	Carbonate of lime.	Carbonate of iron.	Sulphur.	Silex.	Loss.
	degr.	Inch.	Inch.	grs.	gr.	gr.	gr.	grs.	grs.	grs.	grs.	grs.	grs.	gr.
Vieille Source	26·5	90	480	19		27		78	29	41·5		4	4·5	5
Fontaine du Roi.......	30	90	150	18		25		76	123	40		4·5	3·5	8
Sulphur Springs of Cambo...	16	90	120	19				112	57	49		3·	2	8
Ferrugineous Springs of Cambo....	13·5	45		10	4	8	2		4	10	14		3	5
Baths of St. Sauveur..	28	90	140	8		9		22	33		9·5	3·5	2	5
Bagnères de Leuchon..	51	9	18	11		8		10	33	11		6	4	5
Bagnères de Adour....	43			15		17		97	88	65			4	6
Source de la Bassère...		90	20	12		24		56	100	52		3	6	12
Capvern........	20			4				98	171	24			3	4
Barrèges.......	25	90	30	10		11		26	42	18		3	4	4
de Cauterets Source de la Raillere	34	90	160	8		4		18	34	10·5		4·5	4	5
des Espagnols	38	90	170	7		7		14	29	12		5	3	5

Vegetable Chemistry is making advances, but the very nature of the subject, necessarily, prevents these from being rapid; and, therefore, we have few notices on this part of our subject to present to our readers.

M. Clement has made some experiments to ascertain, "the quantity of ligneous matter contained in some roots and fruits*." He is of opinion that the proportion of the ligneous matter is in general much less than is supposed; and it can be made almost to disappear by the mechanical division of the roots or fruits. Thus, he took the skins from potatoes, rasped them, and washed the pulp in a sieve; the *marc* was then put into hot water, and $\frac{1}{200}$dth of sulphuric acid added, in order to liquify the starch that resulted from boiling the fecula which remained in the marc. After boiling for some hours, and filtering, $\frac{3}{4}$ only of a hundredth part of the weight of the potatoes of dry ligneous matter remained on the filter. He determined, by other experiments, "that the skin of common-sized potatoes in 100 parts, formed only half a part of their weight. Thus the potatoes contain $\frac{1}{4}$ part of ligneous matter in 100 parts; all the rest is formed merely of starch in powder, without any adhesion; and more than $\frac{68}{100}$dths of liquid."

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* *Analyses et Propriétés medicales des Eaux minérales et thermales des Départemens des Hautes et Basses Pyrénées, précédés d'un Essai mineralogique de la Vallée d'Ossau*, par M. Poumier, Docteur en Médecine, &c. — We have not seen the original work, but quote from the *Journal des Mines*, vol. xxxviii. p. 227.

"Apples, pears, beet-root, carrots, and many other roots or fruits exhibit also results the more astonishing, since we do not even find in them $\frac{1}{100}$dth of ligneous matter employed in forming their membranes and vessels."

Exudations from the bark of trees.—M. Bidault has examined the orange yellow coloured exudation which oozes from the fissures in the bark of *beech faggots* exposed to moisture in the form of twisted tape, or vermicelli. He dissolved one portion in water, and another in alcohol, and found that the residue had the properties of gluten. Nitric acid converted it into an oxalic acid, a very abundant yellowish matter, and a greasy substance, but no mucous acid. By heat, it yielded carbonate of ammonia and a fœtid oil, showing a close resemblance to animal matter. The exudation of the *olive tree*, which the ancients denominated *gum of the olive*, and employed as a medicine, has been ascertained, by Paoli, to be a compound of a peculiar resin, and a portion of oxidizable matter †: and, according to Bucholz, that of the astragalus *creticus*, or gum tragacanth, is composed of 0·57 of gum, similar to gum arabic, and 0·43 of jelly, in 100 parts‡.

Fecula of Wheat.—This is not a pure starch, but contains some gluten and fibrous matter, with a little oxide of iron and of manganese. Kirchoff[*], finding that the gluten coloured the sugar, into which wheat flour may be converted by sulphuric acid, endeavoured to purify it, and succeeded. His process is, to mix an equal weight of fecula with a very dilute solution of caustic potash, and allow the mixture to remain in a moderate temperature for two or three days, occasionally stirring it. The fluid contracts in this time a brown colour, which is deeper, according to the proportion of gluten contained in the flour. The fluid is then decanted off, and the fecula very well washed. The flour, thus purified, is much whiter than before the operation, and may be converted into syrup, by boiling, for eight hours, 50 parts of it with 150 parts of water and one of concentrated sulphuric acid, and evaporating to the consistence of syrup. The sugar may be obtained in a crystallized form, by putting straws into the syrup, and leaving it at rest for six weeks. The crystals are white, transparent, and similar to those of sugar-candy.

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* *Annales de Chimie et de Physique,* tom. i. p. 173.

† *Giornale di Fisica, &c. di Brugnatelli,* 5 t. Bim. 1815; and *Repository,* vol. v. p. 429.

‡ *Repository,* vol. v. p. 250.

Cocos nucifera. Lin.—Trommsdorff has analysed the fruit of this plant, and found it to contain the following ingredients; 1. The liquor which is found in the nut is composed of much water, a saccharine liquid, a little gum, and a vegetable salt. In the state in which we receive it, it contains some free carbonic acid, also, but it is not probable that this exists in the recent nut. 2. The fleshy part, or kernel, is composed of much fat oil, which readily concretes, and may be regarded as a vegetable butter, an aqueous fluid, albumen, and a mucoso-saccharine matter. From these ingredients, the nutritious quality of this nut may be easily conceived. It has a considerable analogy, in this respect, with animal milk, the gaseous part of that fluid being represented by the mucoso-saccharine matter; and the butteraceous part by the thick oil, which may be separated in the same manner as the butter from the milk[†].

Alcohol in Lissa Wine.—Mr. Brande having examined the Greek wine, known by the name of Lissa, or Dalmatian wine, found that the quantity of alcohol which it contains is 24 per cent. and, in some samples, even as high as 26[‡].

Some comparative experiments by Mr. H. F. Link, on animal *albumen* and the *gluten* of vegetables, have shown that these two principles do not differ much from each other: and may be placed under the same genus. Albumen occurs in a coagulated state in some animals, and in a liquid state in others; and the same remark applies to the form in which gluten is found in vegetables:

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[*] Kirchoff is a Russian chemist, who discovered the mode of converting starch into sugar. The paper which we extract is published in *Schweigger's Journal*, tom. xiv. p. 385.

[†] *Journal de Pharmacie,* No. 3. p. 97.

[‡] *Journal of Science,* &c. vol. i. p. 136.

GLUTEN	ALBUMEN
forms, with nitric acid and soda, muddy solutions: with strong sulphuric acid, a dark-brown solution, with a shade of blood-red: sulphate of gluten precipitates some metals brown: gluten is precipitated grey by water: gluten affords oxalic acid when treated with nitric acid.	forms transparent solutions with nitric acid; and a yellowish-brown solution with strong sulphuric acid: sulphate of albumen precipitates some metals white. Albumen is precipitated white by water: it affords oxalic acid, but in very small quantities.

These two substances do not differ more from each other than different varieties of gum or resin.

Animal Chemistry.—The importance of this branch of chemical science to the physiologist, is too obvious to require any particular exposition. We have already noticed Dr. Marcet's experiments on the *Chyle* and *Chyme**; and will, now, merely add some of the physical properties of these secretions. *Chyle* is a semi-transparent, inodorous fluid, with a very slight milky hue, like diluted whey. It contains a coagulum, resembling the albumen of the egg, but of a pale pink hue. Chyle from animal food putrifies in a few days, whilst that from vegetable diet remains for a week before it begins to putrify: and in both the coagulum is more apt to suffer decomposition than the serous part. Chyle from animal food contains about seven per cent. of solid matter; whereas vegetable chyle yields seldom more than five per cent. *Chyme* is neither acid nor alkaline. When kept, it putrifies in 10 or 12 days; and, when evaporated to dryness, leaves nearly ⅙ of its weight of solid matter. It contains albumen; and, when burnt, 1000 parts yield 12 of charcoal, which also contains iron, lime, and a muriate of soda.

The colour of *blood* is generally supposed to depend on iron; but some experiments by Vauquelin† have demonstrated the erroneous nature of this opinion, and proved, "that a colouring matter may be drawn from the blood, in which the most delicate test cannot discover the smallest trace of iron." The blood, according to Vauquelin's experiments, is composed of—1. albumen; 2. fibrine; 3. colouring matter; 4. a fat and mild oil; the constant presence of which, however, in the blood of man, requires the authority of further experiments.

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* *Vide Medico-Chirurg. Trans.* vol. vi.—*Repository,* vol. v. p. 318.

† *Annales de Chemie et de Physique,* tom. i. p. 9.

Epidermis—It has been supposed, with much probability, that this part of the animal frame is formed from the lymph contained in the lymphatics that pass through the skin. Mr. Hatchett regards that portion of it which is found on the human foot as indurated albumen, an opinion which is confirmed by the following analysis of it, by Professor John*. One hundred parts yielded:

Indurated albumen	93 to 95
Mucus, with a trace of animal (gelatinous?) matter	5
Lactic acid	1
Lactate of potash	
Phosphate of potash	
Muriate of potash	
Sulphate of lime	
Ammonical salt	
Phosphate of lime	
Manganese and iron	
Soft fat	0·05

The epidermis from the arm of a woman afflicted with herpes, was found, when treated in the same manner, to contain:—

Indurated albumen	92 to 93
Mucus becoming insoluble by evaporation; gelatinous mucus precipitated by galls	6 to 7
Lactic acid, and the above stated salts, (no manganese)	1
Soft fat, which remained soluble in diluted alcohol, but separated from concentrated alcohol by cooling	¾ to 1

M. Alibert found uncombined phosphoric acid in the scales, in an epidermis of a person labouring under herpes: in lepra he found only carbonate of lime.

Nails.—These, Professor John found to exhibit nearly the same components as the epidermis; except that the insoluble portion possesses the properties of indurated albumen.

Horns of black cattle have been examined by the same indefatigable experimenter, and found to consist of the following components:—

Indurated albumen, possessing much of the characters of mucus	90

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* *Schweigger's Journal*, vol. xiv. p. 302. *Annals of Philosophy* vol. vii. p. 421.

Gelatinous mucus, with an animal matter thrown down by nutgalls	8
Lactic acid, and lactate of potash	1
Sulphate, muriate, and phosphate of potash	
Phosphate of lime	
Trace of oxide of iron	
Ammoniacal salt	
Fat, about	1

A peculiar volatile substance, which thickens more rapidly than volatile oil, and has the smell of horn*. The *hoof of the horse* possesses all the characters of horn.

NATURAL HISTORY.

Mr. T. Lauder Dick† has verified an observation of Gmelin, regarding the *stickleback* or Gasterosteus *aculeatus*. These small fish, after having deposited or impregnated their ova, begin to swell out on their sides in two parts, so as to assume, if the head and shoulders were taken off, the figure of a fiddle. This is owing to worms, the tænia solida, which are found lying immediately beneath the peritoneum. "The tænia appeared," on opening the fish, "to lie with their heads towards each other in the centre, and having their extremities folded or rolled up in the anterior and posterior regions of the cavity, so as to form the double protuberance, so distinctly visible in the external form of the fish when alive." In time, the worms force their way out at the anus of the fish, which falls a victim to the disease.

Mr. Dick is of opinion, that as this disease begins directly after the spawning, it is a provision of Nature, for preventing too great an accumulation of a particular species; but this opinion requires to be confirmed, by further observations made at different parts of the world, before it can be adopted.

Medicinal Leech.—Notwithstanding the importance of the leech, in a medical point of view, and the employment of it for the abstraction of blood, since very early periods; yet, it is remarkable, that so little had been done to investigate its natural history. Dr. James Rawlins Johnson has endeavoured to fill up this blank, and has executed the task in a very satisfactory manner.

The first section of Dr. Johnson's work‡, traces the medical history of the leech. Themison* was the first who wrote on the utility of the leech; but it was afterwards noticed by Antyllus, Menemachus, Pliny, Aretæus, and a host of writers, through whose works its medical history is traced to the present period. In applying leeches, the ancients frequently first punctured the skin with a lancet; and when the leech was in the act of suction, snipped off the tail, by which means a smaller number of leeches were required, as the blood flowed from the cut extremity.

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* *Annals of Philosophy,* vol. vii. p. 423. † *Ibid.* p. 106.

‡ *A Treatise on the Medicinal Leech; including its Medical and Natural History, with a Description of its Anatomical Structure; also, Remarks upon the Diseases, Preservation, and Management of Leeches.* By James Rawlins Johnson, M. D. F. L. S. &c. 8vo. pp. 147, plates. Lond. 1816.

In the second section, on "the Natural History of the Leech," Dr. Johnson first enumerates the species and varieties of hirudo, described by authors, and gives the systematic characters of the genus and each species, according to the place it holds in it. The H. *medicinales* are common throughout Europe: their colour varies according to the soil on which they are found; thus, at *Black River*, near Glastonbury, they are black; at *Cook's Corner*, of a reddish cast, from the red peat; and at Auler Moor, yellow, from the clay; but whatever this change may be, they still offer spots or lines, which may be considered permanent: these are, "supra lineis flavis sex, intermediis nigro arcuatis, subtus cinerea nigro maculata." The food of the medicinal leech is the blood of fish, frogs, &c.; but Dr. Johnson found that it does not touch the earth worm, nor the larva of aquatic insects, nor take any solid food. Several interesting observations are given, regarding the habits of the horse-leech, which preys upon other leeches, and sometimes upon its own species. The leech is not reproductive when cut in pieces, as has been often supposed; its copulation is similar to that of the garden snail, the animal being hermaphrodite. Dr. Johnson is of opinion it is oviparous; an opinion which is consonant to the observations of those who have had the best opportunities of noticing the animal. Several instances are detailed of its extreme tenacity of life; and the results of some curious experiments given of the effects of various gases on it.

The third section relates to "the anatomical structure of the leech;"—its external structure, the organs of the senses, and the respiratory organs, with its internals tructure, are successively described. We regret that our limits prevent us from entering upon this part of the subject, which does not admit of much abridgement. The diseases to which leeches are subject, are then detailed; and the mode of preserving them pointed out. Extremes of heat and cold must be avoided, and the water changed once in eight days. When kept in large quantities, the vessel should have a false perforated bottom, and

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* He flourished in the first years of the christian æra.

Society, last February*, has proposed a theory founded on the law of resisted attraction, by which he regards all ascents from the center to be regulated. Evaporation, which is always present in vegetation, and the buoyancy produced by the formation of gases, afford, according to Mr. Campbell's ideas, a field for the operation of this law, which he regards as the chief agency in the upright growth of vegetables. Although there is much ingenuity in this explanation, yet, it does not accord with our ideas on the subject. Too much, in all the theories that have appeared, is attributed to mechanical agency, and the fact of plants being living bodies too much overlooked. It does not appear to us more extraordinary that living plants assume an upright position, than that animals walk on their feet instead of rolling on their backs.

M. Delabillardiere is giving an account of the plants he found in his expedition with Entrecasteaux. The genus *lemna* has been examined by the Baron de Beauvois, who has been able to collect ripe grains of the plant, and make them germinate. He has confirmed the opinion that the flower is hermaphrodite; and, what is very remarkable, the parts considered as the plume and radicle separate from the first leaf they produce, and leave it alone to push out roots and other leaves. M. de Laval has illustrated the propagation of the confervæ: having found it to depend on the concentration of the green matter contained between two cells into an isolate globule which issues from the plant at a certain time, and fixes itself on the first body it meets with in its fall; when, after having thrown out some filaments in order to fix itself, it developes a long series of cells. M. Kuhnt, a Prussian botanist, has undertaken a new classification of the *gramina*.

In this section we have only further to notice that the Rev. Mr. Keith has published a New System of Physiological Botany, an analysis of which we propose giving to our readers at an early opportunity; and that the Linnean Society has published the eleventh volume of their Transactions.

MATERIA MEDICA AND PHARMACY.

On this subject we have scarcely any observations to communicate. *Decandolle* has published a second edition of his work, on the Medical Properties of Plants†. As many of our readers may not be acquainted with the work at all, we transtate the conclusions which the author draws as the results of his examination of the individual genera.

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* *Annals of Philosophy*, vol. vii. p. 443.

† *Essai sur les Propriétés Médicales des Plantes, comparées avec leurs formes extérieures et leur classification naturelle.* Par M. A. P. Decandolle, &c. Paris, 1816.

"1. The same parts, or the corresponding juices of plants of the same genus, possess similar medical properties.

"2. The same parts, or the corresponding juices of plants of the same natural family, enjoy similar medical properties.

"3. The following circumstances may produce exceptions to these rules: when, for instance, there is—*a.* A marked difference, although not noticed in botanical works, between the species of a genus and the genera of a natural family. *b.* A false comparison between the organs of analogous plants. *c.* An accidental and transient state, in which some vegetables are found at the time, when they are usually employed. *d.* Unequal mixtures of different chemical principles, really common to all the analogous plants. *e.* Differences in the mode of extracting or preparing them, by which their medical properties are modified. *f.* The ascribing too much importance to accidental properties. *g.* The difficulty of accurately comparing the modus operandi of different medicines. *h.* The difficulty of accurately comparing that action, owing to the various methods of applying medicines to the human body.

"4. Analogy leads to the belief, that the families to which apparently insuperable exceptions apply, in the present state of medical science, will be freed from these when medicine, chemistry, and botany, have arrived nearer to perfection."

This last conclusion is drawn from what has been done since the first edition of his work was published, ten years ago.

Colchicum autumnale.—Sir Everard Home, in a paper read to the Royal Society, has endeavoured to prove, that the beneficial effects of this medicine in gout are produced through the medium of the circulation into which it enters. It lowers the impetus of the pulse, ten or twenty beats, in about twelve hours after it is taken; which Sir Everard attributes to its then reaching the circulation; as the same effect is produced when the infusion of the medicine is injected into the veins. On injecting 160 drops of it into the jugular vein of a dog, the animal lost all power of motion, the breathing became impeded, the pulse at first very slow, but afterwards extremely quick; purging and vomiting supervened, and in five hours he died. On dissection, the viscera were found inflamed.

We have already noticed Dr. Peters, of Anclam's, commendations of sedum *acre*, as a remedy for epilepsy*; M. Chaumeton's observations on the insufficiency of the Calaguala, or roots of the aspidium *coriaceum*[1]; and the observations of several German physicians, on the antispasmodic effects of bismuth, in cases of spasmodic affections of the intestinal canal, accompanied with much irritation[2]. We have also noticed the idea which has been suggested in Germany, that the narcotic effect of opium depends on the presence of prussic acid[3]. How far the developement of this powerful principle, in the preparation which has been lately introduced to the profession, under the name of *decomposed opium*[4], is capable of accounting for the sedative effects of that preparation, we will not venture to assert; but, certainly it is one of very extraordinary powers, and a more manageable form of exhibiting opium, than any other with which we are acquainted. It does not appear to exert a stimulant action, previously to producing its sedative effect, as is the case with opium in any other form; but allays nervous irritations, and induces sleep without in any manner affecting the head.

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* *Repository*, vol. v. p. 175.

THEORY AND PRACTICE OF MEDICINE.

Fever, as the disease which is of most frequent occurrence and the most difficult of cure, and as being more or less symptomatic of every other disease, has always particularly excited the attention of the medical philosopher. Since the period of our last Report, no work has appeared in England directly on this subject. In France, M. I. F. Hernandez, in a treatise which he has intitled "Essai sur le Typhus[5]," has entered pretty fully into an examination of malignant, putrid, bilious, and mucous (muqueuses) fevers, the yellow fever, and the plague. The first part of the work is purely theoretical. The author examines what changes the living fluids are capable of undergoing, and points out the erroneousness of the opinion which supposes, that any state approaching to putridity can take place in the blood whilst it circulates in the vessels; or that there is what has been termed a bilious or a mucous degeneracy of the blood—his chief object, indeed, is to combat the humoral doctrines. In the second part, he treats of the classification of fevers; in the third, of the complications which typhus presents; and in the fourth, of those fevers which degenerate into typhus, as inflammatory and intermittent fevers. The fifth part is dedicated to the consideration of the contagious nature of typhus; comprehending plague, yellow fever, and the other species of the genus: and the sixth, of the medical treatment of the disease. The work is well put together; but the views of the author possess little of novelty.

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[1] *Journal de Pharmacie, Mai* 1816: and *Repository*, vol. v. p. 526.

[2] *Repository*, vol. v. p. 438. [3] *Ibid.* p. 353. [4] *Ibid.*

[5] *Essai sur le Typhus, ou sur les Fièvres dites malignes, putrides, bilieuses, muqueuses, jaune, la peste, &c.* par I. F. Hernandez, Chevalier de la Legion d'Honneur, &c. 8vo. pp. 479. Paris, 1816.

No part of medicine has made more rapid advances than that which relates to female diseases. *M. Nanche* has just sent forth a very respectable work on this subject[1], embracing the diseases connected with the uterine organs.

Another case of the successful effect of *evacuants* and *refrigerants*, in hydrocephalus internus, is added, by Dr. Bateman[2], to the number we have been fortuuate enough to record. The disease had gained considerable progress, the symptoms (the patient was a boy eight years of age) being "rapid pulse, partially flushed countenance, dilated pupils, and extreme pain in the head, so that he screamed upon being moved, or even upon the apprehension of being moved." He was also nearly blind, and strabismus was perceptible. Calomel and jalap were freely exhibited, and the head shaved and washed with water and ether. Leeches and mercurial frictions were employed; but, as Dr. B. observes, the relief was "obviously to be ascribed to the evacuant and refrigerant remedies."

A work of some interest has appeared on the Vesaniæ, by M. J. R. Jacquelin-Dubuisson[3]. On the same subject, Dr. J. Reid has published a volume of Essays[4], which, although containing many important truths, yet, are not offered by the author as possessing much novelty. Dr. Reid, indeed, in his advertisement, acknowledges, that many passages in them have been taken, without much alteration, from the Medical Reports, which, after Dr. Willan had relinquished the task, were taken up by Dr. Reid, and communicated to the Old Monthly Magazine. As having some affinity with these subjects, we have to notice a little Treatise on Incubus, by Mr. John Waller[5]. The author, who appears to have written on this complaint from his own personal experience of its effects, observes, that it may occur in a very profound sleep, without breaking or disturbing that sleep, further than to produce a dream, the memory of which will remain, when awake, in the same manner as that of any other impressive dream: but it happens more frequently, when the patient enjoys an imperfect sleep. It has almost constantly occurred to the author, that the power of volition has been partially recovered for some time before the paroxysms cease. From these and other observations, Mr. Waller concludes, "that the nature of incubus is essentially different from that of either sleeping or waking, and is an absolute state of disease which may occur during sleep, in a slight degree, without breaking that sleep; that it consists in a suspension of the power of volition, very different to what takes place in ordinary sleep, because it is accompanied with a consciousness of that suspension, and a strong desire to recover this power." As the disease arises from a defect in the digestive organs, whatever tends to correct these will facilitate the cure; the bowels should be kept open, and small doses of carbonate of ammonia exhibited with bitters or aromatics and purgative.

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[1] *Des Maladies de l'Uterus ou de la Matrice,* par M. Nanche, Medecin consultant de l'Institution Royale des Jeunes Aveugles, &c. 8vo. pp. 461. Paris, 1816.

[2] *Edin. Journal,* vol. xii. p. 119.

[3] *Des Vesanies, ou Maladies mentales,* par J. R. Jacquelin-Dubuisson, Docteur en Medecine, &c. 8vo. pp. 303. London, 1816.

[4] *Essays on Insanity, Hypochondriasis, and other nervous Affections,* by J. Reid, M.D. 8vo. Lond. 1816.

[5] *A Treatise on the Incubus, or Night-Mare, disturbed Sleep, terrific Dreams, and nocturnal Visions, &c.* by John Waller, Surgeon of the Royal Navy. 12mo. pp. 115. London, 1816.

Dr. Meglin has published a small collection of cases and remarks on *tic douloureux*[1], chiefly with the view of recommending the employment of hyosciamus *niger*, sulphate of zinc and wild valerian root, which he regards as nearly specific in this spasmodic affection. The two former remedies have been already tried in this country, with very little effect.

In concluding these few observations on the practice of medicine, we shall only further mention the paper of our correspondents, Dr. Fraser on cynanche laryngea[2]; that of Mr. Bedingfield on the ulceration of the pharynx and larynx[3]; and of Mr. Stevenson on pemphigus diutinus[4]; as particularly worthy of attention.

On MEDICAL JURISPRUDENCE, Orfila's work embraces in itself every thing that has been done; but as we have given so ample an analysis of it, no particular mention of its contents are required in this place. In this country, Dr. Male has published an Epitome of Juridical or Forensic Medicine; but it is too deficient in details to excite much interest, particularly since the work of Orfila has received an English dress.

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[1] *Recherches et Observations sur la Neuralgiæ faciale, ou Tic Douloureux de la Face*, par M. Meglin, Docteur en Medecine, &c. 8vo. pp. 121. Strasburg, 1816.

[2] *Repository*, vol. v. p. 453. [3] *Ibid*, p. 194. [4] *Ibid*, p. 290.

Synoptical View of the State of the Atmosphere, &c. in London, between the 20th of November, 1815, and the 19th of May, 1816.

From the 20th of November to the 19th of December. — Barometer, highest 30^5; lowest 29^5; — thermometer, highest 44°; lowest 22°;—prevailing winds N. E.—quantity of rain, 45-100ths. This period was exceedingly cold; and the weather was fine and clear. The mortality was unusually great.

From the 20th of December to the 19th of January. — Barometer, highest 30°; lowest 29^5: — thermometer, highest 54°; lowest 30°:— prevailing winds, W. and S.: — quantity of rain, one inch 7-100ths. The atmosphere was very uniformly mild, cloudy, and oppressive. Much rain fell. Towards the end of the month there were several fine days.

From the 19th of January to the 20th of February. —Barometer, highest 30^4; lowest 29^7:—thermometer, highest, 53°; lowest 8°:—prevailing winds, SE. and NE.:—rain guage broke. The variations of temperature in this month were in uncommon extremes even for England. There were days when it was higher than in either of the preceding periods; and in some parts of London the thermometer fell below Zero.

From the 20th of February to the 19th of March. —Barometer, highest 30^2; lowest 29°:—thermometer, highest 52°; lowest 21°:—prevailing winds, W.S.W.:—rain guage broke. There was cloudy weather and a great quantity of rain fell; and though not so frequent, the extremes of cold and heat were great.

From the 20th of March to the 19th of April. — Barometer, highest 30^5; lowest 29^1:—thermometer, highest 52°; lowest 27°:—prevailing winds ENE.:—quantity of rain one inch 20-100ths. The temperature of this period was more steady; but, from the prevalence of the easterly winds, it was often piercingly cold, which greatly retarded vegetation.

From the 20th of April to the 19th of May.—Barometer, highest 30^1; lowest 29^1:—thermometer, highest 67°; lowest 35°:—prevailing winds N. and W.:—quantity of rain one inch 42-100ths. The weather, although it might be generally called fine, yet, excepting a few days, was cold and ungenial.

A Nosological Table *of the aggregate of the Cases recorded in the Monthly Registers of the* Repository *of the* Diseases of London, *between the* 20*th of November* 1815, *and the* 19*th of May* 1816.

CLASS I. PYREXIÆ. *ORDO* 1. Febres.	Nov. Dec.	Dec. Jan.	Jan. Feb.	Feb. Mar.	Mar. April.	April. May.	Total.	Fatal.
Intermittentes	20	12	28	35	24	31	150	
Catarrhales	120	86	82	71	79	43	481	2
Synocha	19	20	12	26	34	29	140	
Typhus *mitior*	17	15	13	9	17	15	86	4
—— *gravior*	8	5	1	2	10	6	32	12
Synochus	44	46	24	36	16	43	209	8
Puerpera	1	4	......	4	3	4	16	1
Remittentes *infantiles*	21	18	17	25	30	12	123	1
ORDO 2. Phlegmasiæ.								
Phlogosis	14	5	19	17	21	11	87	
Phlegmasia *dolens*	1	3	1	1	1	2	9	
Abcessus	24	23	17	19	17	24	124	4
Furunculus	10	4	5	10	10	12	51	
Pernio	19	24	37	24	21	1	126	
Paronychia	4	5	12	6	10	3	40	
Carbunculus	3	2	1	3	4	1	14	1
Ophthalmia	46	42	54	41	55	58	296	
Phrenitis	1	4	3	1	1	6	16	7
Cynanche *tonsillaris*	37	52	52	61	74	61	337	
—— *maligna*	1	5	6	3	7	1	23	1
—— *trachealis*	1	1	2	2	3	3	12	2
—— *pharyngea*	1	3	2	8	3	3	20	
—— *laryngea*	......	......	1	4	1	5	11	
—— *parotidea*	5	7	14	10	9	15	60	
Bronchitis *acuta*	13	9	9	25	16	13	85	14
—— *chronica*	19	6	14	12	15	4	70	9
Pneumonia.	75	67	61	53	61	33	352	47
—— *peripneumonia*	25	26	14	31	26	13	135	6
—— *pleuritis*	33	38	31	30	33	21	186	1
—— *empyema*	......	......	......	......	......	3	3	
Phthisis *pulmonalis*	45	41	25	33	53	38	235	107
Carditis	2	1	......	3	1	1	8	1
Pericarditis	1	1	......	......	1	......	3	
Peritonitis	3	3	6	2	4	4	22	
Gastritis	3	5	2	2	3	6	21	1
Enteritis	8	8	11	1	9	10	57	7
Hepatitis	27	16	23	26	36	22	150	7
Splenitis	......	......	......	......	......	1	1	
Nephritis	5	4	4	8	5	6	32	
Cystitis	......	......	......	1	1	......	2	
Lithiasis	1	3	1	2	4	2	13	
Hysteritis	1	......	......	3	1	1	6	
Rheumatismus *acutus*	63	64	64	76	62	71	400	1
—— *chronicus*	82	73	60	70	83	66	434	
Cephalæa	9	6	5	6	11	9	46	1
Cephalalgia	17	37	39	36	40	39	208	
Pleurodyne	13	8	9	3	6	7	46	
Lumbago	7	4	......	......	......	4	15	

ORDO 2. PHLEGMASIÆ, *Continued.*	Nov. Dec.	Dec. Jan.	Jan. Feb.	Feb. Mar.	Mar. April.	April. May.	Total.	Fatal.
Hysteralgia	1	1	......	2	5	1	10	
Ischias	4	2	......	1	1	......	8	
Hepatalgia	1	3	7	4	5	3	23	
Neuralgia	......	1	1	1	1	5	9	
Nephralgia	1	1	3	3	7	1	16	
Tic Doloreux	......	2	2	1	1	......	6	
Odontalgia	18	9	17	25	21	17	107	
Otalgia	5	4	2	6	7	5	29	
Podagra	26	23	16	20	22	23	130	1
ORDO 3. EXANTHEMATA.								
Variola	26	27	22	32	30	49	186	41
Impetigo *figurata*	1	3	1	2	2	3	12	
—— *sparsa*	......	1	......	......	2	1	4	
—— *erysipelatodes*	......	2	2	4	2	5	15	
—— *scabida*	2	......	2	5	5	1	15	
—— *rodens*	......	......	......	......	......	1	1	
Porrigo *larvalis*	2	4	3	3	1	3	16	
—— *scutulata*	4	7	3	2	4	4	24	
—— *favosa*	2	2	......	4	7	1	16	
—— *decalvans*	......	......	......	5	......	......	5	
Ecthyma	5	4	3	5	2	1	20	
Scabies	57	58	53	58	45	62	333	
Varicella	4	2	17	20	12	9	61	
Vaccinia	43	66	64	62	45	49	329	
Herpes *zoster*	10	6	1	4	1	6	28	
—— *circinatus*	3	1	4	2	4	3	17	
—— *labialis*	3	4	4	4	7	1	23	
—— *præputialis*	1	3	2	1	4	1	12	
Eczema	1	1	4	3	6	1	16	
Hydrargyria	......	......	......	2	3	......	5	
Aphtha *lactentium*	11	10	4	7	7	6	45	
—— *anginosa*	1	......	1	2	......	3	7	
Miliaria	......	3	1	8	5	......	17	1
Rubeola	84	55	47	57	58	48	349	25
Scarlatina *simplex*	32	16	8	16	23	16	111	4
—— *anginosa*	4	8	3	15	12	6	48	2
—— *maligna*	1	1	......	1	3	......	6	2
Urticaria *febrilis*	8	7	8	6	5	2	36	
—— *evanida*	......	......	1	1	4	......	6	
—— *tnberosa*	......	4	......	2	2	......	8	
Roseola	......	......	......	4	5	2	11	
Purpura *hæmorrhagica*	1	......	......	......	......	......	1	1
Erythema *læve*	2	1	2	2	3	3	13	
—— *papulatum*	......	2	......	3	......	......	5	
—— *nodosum*	......	1	......	......	4	......	5	
—— *evanida*	1	......	......	......	......	......	1	
Erythismus *mercuriale*	1	......	......	......	......	......	1	
Erysipelas	30	25	33	25	41	21	175	3
Pemphigus	1	......	......	1	1	......	3	
ORDO 4. HÆMORRHAGIÆ.								
Hæmorrhagia	1	......	......	......	......	......	1	1

A NOSOLOGICAL TABLE *of the aggregate of the Cases recorded in the Monthly Registers of the* REPOSITORY *of the* Diseases of London, *between the 20th of November* 1815, *and the 19th of May* 1816.

CLASS I. PYREXIÆ. *ORDO* 1. FEBRES.	Nov. Dec.	Dec. Jan.	Jan. Feb.	Feb. Mar.	Mar. April.	April. May.	Total.	Fatal.
Intermittentes	20	12	28	35	24	31	150	
Catarrhales	120	86	82	71	79	43	481	2
Synocha	19	20	12	26	34	29	140	
Typhus *mitior*	17	15	13	9	17	15	86	4
—— *gravior*	8	5	1	2	10	6	32	12
Synochus	44	46	24	36	16	43	209	8
Puerpera	1	4	......	4	3	4	16	1
Remittentes *infantiles*	21	18	17	25	30	12	123	1
ORDO 2. PHLEGMASIÆ.								
Phlogosis	14	5	19	17	21	11	87	
Phlegmasia *dolens*	1	3	1	1	1	2	9	
Abcessus	24	23	17	19	17	24	124	4
Furunculus	10	4	5	10	10	12	51	
Pernio	19	24	37	24	21	1	126	
Paronychia	4	5	12	6	10	3	40	
Carbunculus	3	2	1	3	4	1	14	1
Ophthalmia	46	42	54	41	55	58	296	
Phrenitis	1	4	3	1	1	6	16	7
Cynanche *tonsillaris*	37	52	52	61	74	61	337	
—— *maligna*	1	5	6	3	7	1	23	1
—— *trachealis*	1	1	2	2	3	3	12	2
—— *pharyngea*	1	3	2	8	3	3	20	
—— *laryngea*	......	......	1	4	1	5	11	
—— *parotidea*	5	7	14	10	9	15	60	
Bronchitis *acuta*	13	9	9	25	16	13	85	14
—— *chronica*	19	6	14	12	15	4	70	9
Pneumonia.	75	67	61	53	61	33	352	47
—— *peripneumonia*	25	26	14	31	26	13	135	6
—— *pleuritis*	33	38	31	30	33	21	186	1
—— *empyema*	......	......	......	......	......	3	3	
Phthisis *pulmonalis*	45	41	25	33	53	38	235	107
Carditis	2	1	......	3	1	1	8	1
Pericarditis	1	1	......	......	1	......	3	
Peritonitis	3	3	6	2	4	4	22	
Gastritis	3	5	2	2	3	6	21	1
Enteritis	8	8	11	1	9	10	57	7
Hepatitis	27	16	23	26	36	22	150	7
Splenitis	......	......	......	......	......	1	1	
Nephritis	5	4	4	8	5	6	32	
Cystitis	......	......	......	1	1	......	2	
Lithiasis	1	3	1	2	4	2	13	
Hysteritis	1	......	......	3	1	1	6	
Rheumatismus *acutus*	63	64	64	76	62	71	400	1
—— *chronicus*	82	73	60	70	83	66	434	
Cephalæa	9	6	5	6	11	9	46	1
Cephalalgia	17	37	39	36	40	39	208	
Pleurodyne	13	8	9	3	6	7	46	
Lumbago	7	4	......	......	......	4	15	

ORDO 2. Phlegmasiæ, *Continued.*	Nov. Dec.	Dec. Jan.	Jan. Feb.	Feb. Mar.	Mar. April.	April. May.	Total.	Fatal.
Hysteralgia	1	1	......	2	5	1	10	
Ischias	4	2	......	1	1	......	8	
Hepatalgia	1	3	7	4	5	3	23	
Neuralgia	......	1	1	1	1	5	9	
Nephralgia	1	1	3	3	7	1	16	
Tic Doloreux	......	2	2	1	1	......	6	
Odontalgia	18	9	17	25	21	17	107	
Otalgia	5	4	2	6	7	5	29	
Podagra	26	23	16	20	22	23	130	1
ORDO 3. Exanthemata.								
Variola	26	27	22	32	30	49	186	44
Impetigo *figurata*	1	3	1	2	2	3	12	
—— *sparsa*	......	1	......	......	2	1	4	
—— *erysipelatodes*	......	2	2	4	2	5	15	
—— *scabida*	2	......	2	5	5	1	15	
—— *rodens*	......	......	......	......	......	1	1	
Porrigo *larvalis*	2	4	3	3	1	3	16	
—— *scutulata*	4	7	3	2	4	4	24	
—— *favosa*	2	2	......	4	7	1	16	
—— *decalvans*	......	......	......	5	......	......	5	
Ecthyma	5	4	3	5	2	1	20	
Scabies	57	58	53	58	45	62	333	
Varicella	4	2	17	20	12	9	64	
Vaccinia	43	66	64	62	45	49	329	
Herpes *zoster*	10	6	1	4	1	6	28	
—— *circinatus*	3	1	4	2	4	3	17	
—— *labialis*	3	4	4	4	7	1	23	
—— *præputialis*	1	3	2	1	4	1	12	
Eczema	1	1	4	3	6	1	16	
Hydrargyria	......	......	......	2	3	......	5	
Aphtha *lactentium*	11	10	4	7	7	6	45	
—— *anginosa*	1	......	1	2	......	3	7	
Miliaria	......	3	1	8	5	......	17	1
Rubeola	84	55	47	57	58	48	349	25
Scarlatina *simplex*	32	16	8	16	23	16	111	4
—— *anginosa*	4	8	3	15	12	6	48	2
—— *maligna*	1	1	......	1	3	......	6	2
Urticaria *febrilis*	8	7	8	6	5	2	36	
—— *evanida*	......	......	1	1	4	......	6	
—— *tnberosa*	......	4	......	2	2	......	8	
Roseola	......	......	......	4	5	2	11	
Purpura *hæmorrhagica*	1	......	......	......	......	......	1	1
Erythema *læve*	2	1	2	2	3	3	13	
—— *papulatum*	......	2	......	3	......	......	5	
—— *nodosum*	......	1	......	......	4	......	5	
—— *evanida*	1	......	......	......	......	......	1	
Erythismus *mercuriale*	1	......	......	......	......	......	1	
Erysipelas	30	25	33	25	41	21	175	3
Pemphigus	1	......	......	1	1	......	3	
ORDO 4. Hæmorrhagiæ.								
Hæmorrhagia	1	......	......	......	......	......	1	1

ORDO 4. HÆMORRHAGIÆ, *Continued.*	Nov. Dec.	Dec. Jan.	Jan. Feb.	Feb. Mar.	Mar. April.	April. May.	Total.	Fatal.
Epistaxis	4	9	10	9	14	10	56	
Hæmoptöe	21	20	17	14	16	28	116	5
Hæmorrhois	28	43	28	24	31	35	189	
Menorrhagia	24	33	36	30	31	26	180	2
Abortus	24	15	20	19	27	25	127	1
Hæmatemesis	3	2	1	2	7	2	17	1
Hæmaturia	2	3	......	3	......	2	10	
ORDO 5. PROFLUVIA.								
Catarrhus	245	247	191	165	173	110	1131	
Leucorrhœa	29	43	20	33	27	31	183	
Dysenteria	11	16	7	16	10	12	72	14
CLASS II. NEUROSES. *ORDO* 1. COMATA.								
Apoplexia	12	6	15	7	19	13	72	41
Paralysis	12	15	14	21	27	11	100	6
——— *hemiplegica*	13	14	2	3	7	9	48	2
Tremor	......	1	......	......	......	......	1	
ORDO 2. ADYNAMIÆ.								
Angina *pectoris*	1	3	......	......	1	1	6	1
Syncope	3	5	2	......	5	5	20	
Asphyxia	1	1	......	......	......	......	2	2
Asthenia	33	31	20	17	39	38	178	6
Dyspepsia	89	85	122	105	124	110	635	
Anorexia	8	8	4	2	9	8	39	
Cardialgia	15	19	8	17	30	22	112	
Gastrodynia	23	25	26	20	33	39	166	
Entrodynia	14	13	10	18	24	25	104	
Hypochondriasis	9	8	6	13	15	11	62	
Chlorosis	9	24	14	10	15	14	86	
Icterus	20	9	11	13	16	6	75	1
Vertigo	18	27	20	20	42	20	147	
ORDO 3. SPASMI.								
Spasmi	18	17	16	11	8	23	93	3
Tetanus	......	......	......	......	1	......	1	1
Singultus	......	1	......	......	1	1	3	
Convulsio	21	16	15	22	18	8	100	15
Chorea	2	......	1	3	5	4	15	
Catalepsis	......	......	......	......	......	1	1	
Epilepsia	8	10	8	8	11	9	54	1
Palpitatio	9	5	9	4	8	1	43	
Asthma	138	111	145	79	111	81	665	67
Dyspnœa	26	36	25	17	29	29	162	
Pertussis	44	30	58	48	62	48	290	19
Pyrosis	9	6	4	11	7	5	42	
Ileus	......	......	......	2	......	......	2	
Colica	39	20	21	16	18	15	126	
—— *pictonum*	4	4	3	4	2	2	19	
Cholera	19	6	4	9	8	17	63	1
Diarrhœa	86	93	67	67	74	59	446	7

ORDO 3. SPASMI, *Continued.*	Nov. Dec.	Dec. Jan.	Jan. Feb.	Feb. March	March April	April May	Total.	Fatal.
Diabetes	1	1		2			4	
Hysteria	28	16	21	21	27	26	139	
Strictura	8	17	9	11	9	9	63	
ORDO 4. VESANIÆ.								
Amentia	1	1					2	
Mania	9	11	10	6	6	7	49	2
Melancholia	5	5	4	7	7	5	33	1
Delirium *tremens*	2						2	
CLASS III. CACHEXIÆ.								
ORDO 1. MARCORES.								
Tabes	12	17	14	12	3	5	63	12
Atrophia	2	10	3	7	5	1	28	3
ORDO 2. INTUMESCENTIÆ.								
Plethora	4	7	12	4	5	5	37	
FLATUOSÆ.								
Tympanites			1				1	
AQUOSÆ.								
Anasarca	31	37	29	26	35	29	183	24
Hydrocephalus	8	7	10	12	17	11	65	41
Hydrothorax	7	5	7	6	11	5	41	18
Ascites	9	9	13	10	28	25	94	12
Hydrocele	1	1	2	3	2	1	10	
SOLIDÆ.								
Physconia	1	1		1			3	
Calculus		1	1	1	2	1	6	1
Rachitis	2					1	3	
ORDO 3. IMPETIGINES.								
Scrofula	10	13	16	25	41	25	130	
Syphilis	51	43	37	46	44	51	272	
Scorbutus	1	4	2	4	1	2	14	
Strophulus *intertinctus*	4	2		3	2		11	
—— *confertus*			1				1	
Lichen *simplex*	2	2	2	4		1	11	
Prurigo *mitis*	2	5	2	1	2		12	
—— *senilis*	5	6		3	4		18	
—— *formicans*						1	1	
Lepra	3	6		3	1	5	18	
Psoriasis *guttata*	4	1		10		4	19	
—— *gyrata*			1			4	5	
—— *inveterata*	3	2	2	4	3	5	19	
Pityriasis				1			1	
Ichthyosis	2	1					3	
Acne		5	3	2	3	6	19	
Sycosis *menti*			1				1	
—— *capilitii*					1		1	

The spring months have been, for the most part, cold and ungenial. Vegetation was scarcely ever known to be so backward as in the present season.

The month of March produced a great many cases of disease, of which cough and the different species of cynanche were most prominent. Cynanche parotidæa, which commenced in February, continued during the present month. Of the fourteen new cases in March, one occurred in the first week; seven in the second; two in the third; and four in the fourth. April and May were, upon the whole, healthy. In the former of these, an obstinate case of Epistaxis appeared, which continued at intervals nearly five weeks. It did not seem to depend upon plethora, either general or partial, but upon some peculiarity in the blood itself, or in the capillary vessels containing it: for during the greater part of the time that the hæmorrhage continued, the lower extremeties were covered with patches of extravasated blood, resembling in appearance common bruises. The remedies which were most serviceable in this case were, extractum cinchonæ, infusum rosæ, and acidum sulphuricum.

During the same month a fatal case of Carditis took place, the particulars of which shall now be detailed.

H. W. aged 12 years, though of a delicate frame, had enjoyed a general good state of health. On Saturday, the 20th of April, he was apparently quite well; having been on that day on a visit to one of his relations, by whom this observation was made. On the next morning he was brought to the Infirmary, discovering at the same time the usual symptoms of fever; namely, great bodily heat, a quick pulse, the tongue white and much furred. The next day (Monday) his fever had increased, but the only pain of which he complained was in the left thigh and knee, which ceased before night: in the afternoon he became delirious with much watchfulness. On Tuesday the delirium was very considerable, but without any comatose tendency; and the pupil of the eye much dilated, but not insensible to light. He complained little of pain, but, when closely pressed upon that subject, he pointed to his forehead. Early in the afternoon of that day he had a kind of convulsive fit, which soon went off. In the evening all his symptoms became aggravated, and he passed the night almost entirely without sleep. On the following morning he appeared much sunk, his breathing for the first time became difficult. He was then sufficiently sensible to answer any question that was put to him; but soon afterwards he became insensible, and gradually declined until about two in the afternoon, when he expired.

As the delirium, which commenced on Monday afternoon, was similar to what frequently occurs in the earlier stages of fever, particularly in young persons, there was no indication until the following morning, which could lead to the supposition of organic disease. It then became probable, from the symptoms, that there was effusion within the head. The medical treatment until that period had been directed to counteract general fever, namely, evacuants and antimonials, with the warm bath. Leeches were afterwards applied to the temples, a blister to the nape of the neck, and several stools procured by a calomel purgative combined with rhubarb.

The unusually rapid progress and termination of this disease, rendered it highly desirable to embrace the judicious proposal of the boy's father for an examination after death; which was accordingly made by Mr. Stanley, one of the assistant surgeons of St. Bartholomew's Hospital, to whom I am indebted for the following account of the appearances upon dissection, which discovered a state of disease so entirely unexpected, that it will be necessary to premise, that at no period of his illness did he complain of pain in any part of the thorax, nor was there any irregularity observed in the pulse. Not being present at the time of the convulsive fit, stated to have taken place on Tuesday afternoon, I am unable to speak with confidence concerning it; but it is possible that it might have been only Syncope, which symptom Dr. Baillie thinks it probable is particularly connected with Carditis.

DISSECTION.

The head being first examined, the skull was observed to be unusual thick, and the sutures closely consolidated. Nothing was to be remarked in the brain, excepting a slightly plethoric state of the vessels. The abdominal viscera and the lungs were perfectly healthy. There was contained within the bag of the pericardium a turbid serous fluid, in quantity about five ounces, with flakes of lymph floating about in it. The internal surface of the membrane was also lined by the lymph. The heart greatly loaded throughout with blood. Its muscular fibres very soft in texture, and in various parts, secreted between them, small depositions of pus: this pus being thick and dark coloured, and each deposition being lodged in a small cavity about the size of a pea. The cavities of the heart were all loaded with blood. Every other part of the organ was healthy except a general turgescence of the vessels.

I forbear making any remarks on this very unusual disease of inflammation of the muscular fibres of the heart; having reason to expect that Mr. Stanley will make a communication on this subject to the Medico-Chirurgical Society; a task which he is well qualified to undertake; and by that means the public will be in possession of a full investigation of it.

II.

Some Observations on Inflammation. In Reply to Dr. PARRY, by WILSON PHILIP, M. D. Worcester.

IN offering the remarks I am about to make on one part of a work which has lately appeared, intitled, *Elements of Pathology and Therapeutics, &c.*, evidently the result of much reflection and very accurate observation of disease, I am not a volunteer. I am called upon, either to reply to the following paragraph, or tacitly to acknowledge the inaccuracy of opinions which I many years ago ventured to lay before the public. Of a conclusion inconsistent with these opinions Dr. Parry observes, "Neither will this conclusion be invalidated, were it even proved, according to the opinion of Dr. Wilson, that the velocity of the blood in the vessels of an inflamed part is diminished, unless it be also proved, that the velocity is diminished in a greater proportion than the quantity is increased." Vol. 1, p. 84.

When we consider the great importance of inflammation, both as constituting one of the most frequent, varied, and fatal diseases, and as intimately connected with by far the majority of all the diseases to which we are subject, Dr. Parry will not be blamed for having devoted a large portion of his work to an inquiry respecting its nature, or, according to medical language, its proximate cause. As it is the first requisite in all inquiries to have a clear conception of the object in view, Dr. Parry, in the following passages, explains the sense in which he uses the term proximate cause, censuring the common acceptation of this term. After repeating the commonly received definition of proximate cause, he observes, "To this I answer, first, that, according to this definition, the proximate cause is, strictly speaking, a part of the disease, which implies the absurdity that a thing is the cause of itself. Secondly, the very name *causa proxima*, or that which is nearest to any thing, shews that it cannot form a part of that thing, unless we admit that a thing can be, at the same time, a part of another and not a part of it. Thirdly, causation, according to all our conceptions respecting it, implies not only difference and separation, but also priority. This definition of proximate cause, therefore, involves the further absurdity of being at once prior to an effect and co-existent with it. In defining the terms, I should therefore be disposed to say, that a proximate cause is that phenomenon of the body, or part, most immediately preceding the state which we call disease, without which previous phenomenon the disease is not known to exist." Vol. 1, p. 89 et seq.

The accuracy of Dr. Parry's reasoning in the foregoing passages will not be questioned; but it appears to me that there is an error in his premises, which, if admitted, must throw the whole subject into confusion. This I think will be apparent if we ask ourselves what Dr. Parry means by the word disease in the preceding quotation. Does he not evidently mean the state of the diseased part? According to this definition, when we speak of a disease, we do not mean any particular train of symptoms, but the state of the body which occasions the train of symptoms. Thus, then, if we wish to avoid being altogether unintelligible, we must have some other name for the various trains of symptoms enumerated by nosologists, and which have hitherto been known by the name of diseases. But Dr. Parry here forsakes us: he proposes no new name for the trains of symptoms. He is therefore involved in the following dilemma: he must either maintain that no such name is necessary, and consequently that our systems, both of nosology and practice, are useless; or he must employ the same term both for the trains of symptoms and the particular states of the body, or part, which give rise to them. Now as, in other passages of his work, he uses the word disease in the common acceptation, it is evidently the latter difficulty in which he is involved; and surely nothing can tend more to confuse our reasonings on this subject. If Dr. Parry adopt the common meaning of the word disease; if he admit that it is merely the name of a certain train of symptoms; he must also adopt the common meaning of the term, proximate cause, which simply means that state of the body, or part, which produces this train of symptoms, to which the common definition of proximate cause very correctly applies.

If we could ascertain the immediate cause of the trains of symptoms constituting diseases, it would be proper to confine to it alone the term proximate cause; but in what case can this be done? I believe in none. Let us, for example, take the simplest instance of disease. A man is stretched on the rack:—morbid distension is the proximate cause of his pain, but who can tell what and how many events intervene between this cause and the sensation of pain? how the stretching of the tendons affects the nerves? what changes the nerves undergo? and how they affect the sensorium? Let us not be led away from the great object in view by too much refinement. The only practical use of the term proximate cause seems to be the common one; because the only thing which it concerns the mere physician to know, is that state of body which, when present, causes, and, when removed, removes the disease. In this sense a disease is justly said to have more than one proximate cause; because if we can, from any part of the chain of circumstances which supports the disease, remove one link, the chain is broken. This, I think, is clearly the sense in which the term proximate cause, not indeed very well chosen, is generally employed by writers. It is used merely in contradistinction to the term remote cause. It would indeed be gratifying, if it could be done, to ascertain that cause which is last in the chain, and consequently may be said literally to produce the symptoms; but the object of greatest consequence, as, indeed, Dr. Parry observes in his 224th paragraph, is to ascertain any cause, which, being removed, will remove the disease: whether this is the immediate cause of the symptoms or not, is comparatively of little importance. In most diseases, indeed, we have reason to believe, that the immediate cause of one symptom is not that of others; a circumstance, which, were our object that of tracing their immediate cause, would greatly perplex our labours.

If there be any truth in the preceding observations, we must reject Dr. Parry's in favour of the common acceptation of proximate cause; and in the question respecting the nature of inflammation, I conceive the object is simply to ascertain what state of the part affected will, if removed, remove the disease.

According to Dr. Parry's view of inflammation, and his definition of proximate cause, the proximate cause of this disease is an increased momentum of the blood in the inflamed part. I should be happy to consider particularly, every step of the ingenious, though, as it appears to me, fallacious train of reasoning, by which he arrives at this conclusion. But as the limits of such a communication as the present do not admit of that, I shall confine myself to the statement of such facts as appear to be incompatible with his opinion.

As Dr. Parry admits that there is a greater quantity of blood in the vessels of an inflamed part, than in the same part when sound, he admits that the vessels in inflammation are morbidly distended; the necessary inference from which is, that their power is lessened. This inference did not escape Dr. Parry; but he maintains, in the 198th paragraph, that the blood is moved in the capillary vessels, not by the power of these vessels, but by the impulse it receives from the heart. This opinion it is not difficult to submit to the test of direct experiment.

I have found, by the assistance of the microscope, both in warm and cold blooded animals, that the motion of the blood in the smaller vessels continues for a very long time after what we call death, although immediately after it a ligature be thrown round all the vessels attached to the heart, and this organ be removed. I have seen it continue in the mesentery of a rabbit, for more than an hour after the removal of the heart, even where the bowels had been hanging out of the abdomen for the whole of this time, and had become dry and cold. Under favourable circumstances, I have no doubt, from what I have observed, that it would continue for several hours after death.

Dr. Parry ascribes the continuance of the motion of the blood in the capillaries, in certain experiments of Haller, after the aorta had been secured by ligatures and removed from the heart, to the contractile power of the larger arteries; and he has, in a work published since that above alluded to, intitled "An Experimental Inquiry into the Nature, Cause, and Varieties of the Arterial Pulse, &c." made many interesting experiments, for the purpose of ascertaining the degree of this contractile power. That something must be ascribed to this cause, cannot, I think, be denied; but that the motion of the blood in the capillaries chiefly depends on their own powers, appears from the following facts, which I have ascertained by repeated experiments. When the power of the capillaries is destroyed, the *vis a tergo*, even in the living animal, is not capable of propelling the blood through them; and as the motion of the blood in these vessels begins to fail, either in the living or the dead animal, it is observed to stop and go on, to move backwards and forwards in the same vessel, and to stop in some vessels of the same part sooner than in others; phenomena, which, it is evident, could not arise from the contractile power of the larger arteries.

Dr. Parry found, that the larger arteries have their diameter lessened for a certain time after death; but that after this time it again enlarges. I should be inclined to ascribe these phenomena, if indeed they at all obtain, except when the artery is exposed to the influence of the air, to a cause different from that assigned by Dr. Parry. We must suppose, I think, that the action of the capillaries combines, with the contractile power of the larger arteries, in lessening the contents of the latter. As long as these contents are of sufficient bulk to stimulate the vessel, it will closely embrace them, and thus become lessened in its diameter, in proportion as its contents are lessened; but, by the continued action of the capillaries, the bulk of these at length becoming too small to stimulate the vessel, it will be relaxed, and thus by its elastic power regain a larger diameter.

The continued action of the capillaries after sensible death, accounts for the larger arteries being at length left empty or nearly so. How easily it may have this effect, will appear when we consider, that vessels in dividing into branches have the sum of their arteries increased. That the emptyness of the arteries after death does not arise from their contracti power, as Dr. Parry supposes, appears from our hardly ever finding them at any period after death so contracted as to account for the smallness of their contents. I have watched a large artery after death till it was empty, without having observed in it any such contraction, as could at all account for its being so.

We may be deceived respecting the contractile power of arteries by dividing and making other experiments on them while exposed to the air, which applies a peculiarly strong stimulus to parts not usually exposed to it, and which I cannot help thinking is the principal cause of the contraction observed by Dr. Parry. If the abdomen of a warm-blooded animal be opened soon after death, those parts of the intestines which are exposed to the air will, though in general the effect is an increase of the peristaltic motion, sometimes be contracted to less than half their usual size, and in this state remain motionless. May not the permanent contraction, excited by the influence of the air, be the cause of Dr. Parry's not having observed any alternate contraction and dilatation in the exposed arteries, which seem so sensible to the finger through their coverings, while they are defended from this influence? Large arteries are sometimes thrown into strong partial contractions by exposure to the air. (See the account of an Experiment of Verschair in Dr. Fowler's Theses on Inflammation.)

Does it not appear, from the foregoing experiments, that the blood is moved in the capillaries by the power of these vessels themselves, and consequently that if they are debilitated, the momentum of the whole blood in the part, as well as its velocity, must be less than in health? The truth of this inference appears indeed from direct experiment. I have related many experiments in the introduction to the second part of my Treatise on Febrile Diseases, in which the state of the vessels was observed, by means of the microscope, in the different stages of the inflammation; and a plate, representing their state in the different stages of this disease, is there given. From these experiments it appears, not only that the velocity of any particular part of the blood is lessened in an inflamed part, which Dr. Parry admits may be the case, supposing the lessened momentum, arising from this cause, more than compensated by the increased quantity of blood, but that the general momentum of the blood also in the inflamed part is lessened, because the blood was observed to move more and more slowly, till, in the more inflamed parts, it ceased to move altogether. Now, before the momentum of the blood in these parts was wholly lost, it must have passed through all the degrees between the healthy momentum, and none, during which the part exhibited the phenomena of inflammation. In the introduction above alluded to, I have pointed out how this view of the subject appears to be supported by the symptoms, causes, and cure of that disease.

III.

On the Absence of Urea in the Urine of Hepatitis. By C. B. Rose, Surgeon, Bottesdale*.

Permit me to transmit to your chemical and medical readers the knowledge of the absence of urea from urine not being confined to the urine of diabetes only: for, while examining the urine of a girl labouring under a chronic inflammation of the liver, I could discover no trace of urea; indeed its absence was as complete as in cases of diabetes mellitus; and I have ascertained this to be the case, by a repetition of my experiments on the urine in several cases of acute as well as chronic inflammation of the liver. The urine operated upon in acute hepatitis was rather high-coloured; in the chronic disease, it was pale; its odour not so urinous, but very much like that of cyder; its specific gravity less than that of healthy urine; and consequently left a smaller quantity of extract when evaporated.

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* We think it necessary to state, that Mr. Rose's paper was sent to us accompanied with the following letter:

"Gentlemen, *Bottesdale, May 1st,* 1816.

"Seeing that you have noticed in your *Retrospect of the Progress of Medical Science* (vide vol. v. p. 31.), my discovery of the absence of urea in the urine of hepatitis, published in the Annals of Philosophy for last June; and it having been confirmed by so able a chemist as Dr. Henry; I am induced to request of you a place for my paper in your valuable Journal. I am desirous of seeing it in the pages of the *Repository,* knowing that it will be extensively circulated among my professional brethren, to whom I flatter myself it will be interesting, and may be useful.

"Dr. Henry's attention having been called to this subject, he has examined this peculiar morbid state of urine in a more scientific manner than myself; and his communication to Dr. Thomson, I conceive to be a very useful appendage to mine; I have therefore extracted it from the Number of the Annals for November, and have placed it at the end of the one now sent to you. As the paper contains other matter equally interesting to medical practitioners, I have extracted the whole of it, thinking it probable that many who now see it would not, if it existed in the Annals only.

"I have long deferred sending you this paper, because I hoped to be able to add something more to it; but I have unfortunately been so situated, that I have not had opportunities of prosecuting the subject as I intended.

"I am yours respectfully, C.B. Rose."

Whether the above state of the urine is dependant on the dyspeptic stomach from hepatitis only, or on every case of dyspepsia, I have not yet satisfied myself; but I intend pursuing the subject with that view.

Unavoidably drawn by this discovery to turn my thoughts on the nature of secretion and digestion, I have dared to indulge in speculative ideas. That there subsists a great connection between the stomach and the kidneys, not merely sympathetic, and that the state of the urine depends very much upon the state of the digestive organs, has long been observed; but that there existed this decided concatenation between the liver, stomach, and kidneys, was not, I think, before known. As this concatenation is demonstrated by the above circumstance, is it not probable that the kidneys have a similar consent of action with all the chylopoetic viscera? and is it too sweeping a conclusion to draw from our present knowledge of secretion and digestion, if we say that it is probable, in diabetes mellitus, the saccharine quality of the urine is dependant on the morbid action of the stomach, and the absence of urea from the urine on a deranged state of the hepatic function? or to suggest the probability that some one or other of the proximate elements of the urine is lost, or a new one added, by a morbid action of one of the chylopoetic organs? For instance, what change in the urine may a scirrhous pancreas produce? These inferences must not be tolerated until more data are produced; nor should I have hazarded either of them, had I not some reason to believe, from the examination of the urine of two dyspeptic patients, that the want of urea is observed in cases of hepatitis only.

Might not the want of urea in the urine of persons attacked with hydrocephalus be a diagnostic mark between hydrocephalus *idiopathicus* and hydrocephalus *with altered function* of the liver?

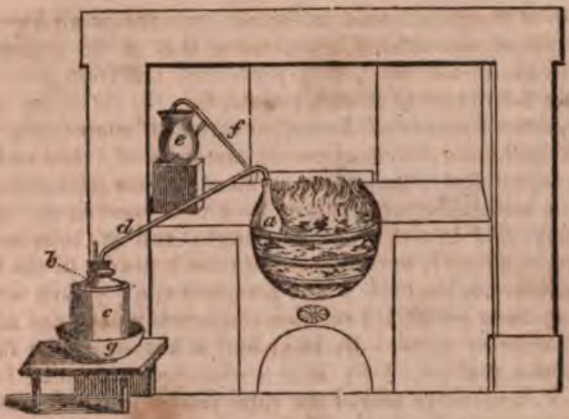
It is, I trust, the general opinion of the physiologists of the present day, that the kidneys are not *merely separating but secreting organs*: and the absence of urea in hepatitis I consider as an additional fact in support of the latter opinion; for if that state of the stomach consequent in a morbid action of the hepatic system be productive of a want of urea in the urine; and if urea have never been found in the blood (which it never has); must we not infer that its elements are the products of digestion? that they, in a peculiar state of combination, are presented to the cryptæ of the kidneys, where it is presumed the secretory power resides, and there recombined? I have communicated this fact to you, and my reflections on it, in its unexplored state, merely with the view to excite an inquiry into and examination of the subject by persons far more equal to the task than myself.

Perhaps to those of your medical readers who are but little versed in chemical analysis, and not furnished with any chemical apparatus, and yet would be desirous of examining the urine in hepatitis, not only with the intent to prosecute the above inquiry, but also to assist in establishing the diagnosis of that disease; a brief relation of the method I have followed in my experiments, and a description of the apparatus I have invented to operate with, may not be unacceptable.

Dr. Henry, in the first Number of the Annals of Philosophy, after having related some experiments on the urine discharged in diabetes mellitus, in which he employed the nitric acid with the extract as a test of urea, says, "there is one property of this substance, however, originally pointed out by Fourcroy and Vauquelin, which enables us to detect urea even when present in such minute quantities as to escape discovery by nitric acid. Amidst the great variety of animal products, this appears to be the only one which is decomposed when in a state of solution by the temperature of boiling water. At this low degree of heat its elements, held together by a balance of affinities which is easily disturbed, arrange themselves in a new order; ammonia and carbonic acid are generated, and carbonate of ammonia is composed, equivalent in weight to about two-thirds that of urea. It is in the fluid, therefore, condensed during the evaporation of diabetic urine that we are to look for traces of the existence of urea; and in this fluid, I have invariable found a sufficient quantity of carbonate of ammonia to restore the colour of reddened litmus paper, and to precipitate muriate of lime." In my search for urea, I have generally chosen this method of distilling the urine, and applying the tests to the condensed fluid, in preference to the more tedious process of evaporation for the extract, &c. In Dr. Henry's paper (Annals of Philosophy, No. 1), and in his Elements of Experimental Chemistry, may be found information sufficient to enable any one to accomplish the examination of urine for the above purpose with the necessary precision.

Having collected the condensed fluid, I put some of it into a wine glass, to which I added some solutio muriatis calcis; if a precipitate subside, I drop some acidum muriaticum into the liquid, which, from its greater specific gravity, passes to the bottom of the glass, comes in contact with the precipitate, and a *brisk effervescence* follows, the decisive test of the existence of urea in the urine.

Not being provided with retorts, &c. the following apparatus is what I constructed to effect the distillation of the urine; and it answered the purpose extremely well. My retort is a Florence oil-flask; to which, by means of a perforated cork, I adapt a barometer tube, which has a small part at the end next the flask bent to rather an acute angle, and at the other end a portion sufficiently long that it may reach nearly to the bottom of the receiver, bent to nearly a right angle; so that when the opposite ends are placed in their respective places, the tube lies in an inclined plane. By means of a leathern collar fastened to the top of a jar, I fix in it a wide-mouthed bottle for a receiver. The lower end of the tube passes into this through a perforated cork, and a small short tube is passed through the cork also, into the receiver, to admit of the exit of air. This cork should be luted into the bottle; perhaps glaziers' putty is the best lute. The jar is filled with cold water, as a refrigerator; but the principal agent in condensing the vapour, is a glass syphon; and so efficient is it, that the condensed vapour falls guttatim into the receiver. It is placed so as to convey cold water on to the tube which connects the retort with the receiver; and this, trickling along it, is received by a large bason, in which the jar and bottle stand. The tube may be luted to the flask and bottle with a stiff dough of flour and water. If the lute is not carefully and in sufficient quantity applied around the tube where it passes into the cork of the receiver, the water from the syphon will wash it away, and into the receiver, making the liquid cloudy, and oblige you to repeat the process. The longer the tube is to convey the vapour, and the larger its calibre, the better it is for your purpose. The calibre of the syphon must be small, between a twelfth and a sixteenth of an inch in diameter. These tubes may be bent in any form, with the assistance of a lamp and blow-pipe, or a blacksmith's fire. Fearful that my description of the still which I have been in the habit of using is not sufficiently clear to enable any body to construct one by it, I have subjoined a rough sketch of it as it appears when in use. The readiness with which its materials may be had, the ease with which it may be constructed, and the convenience of such a simple apparatus to the juvenile experimentalist, are things which, I hope, will in some measure repay you for giving the above tedious description, and the following sketch a place, which might have been occupied by something of more importance.



a the Florence oil-flask.
b the bottle, as the receiver.
c the jar in which the bottle is fixed.
d the barometer tube to convey the vapour.
e the jug of cold water.
f the glass syphon
g the bason in which the jar stands.

THE following is the extract of a letter from Dr. Henry, of Manchester, to Dr. Thomson, and published in the Annals of Philosophy, No. 35.

" Soon after the publication of Mr. Rose's paper, in your Number for June, a medical friend (Dr. Holme) gave me a specimen of the urine of one of his patients, a female, labouring under chronic hepatitis. He had been struck with the absence of most of the usual qualities of that fluid, such as colour and smell, of both which it was nearly destitute. I found its specific gravity to be only 1·0033 (the average of healthy urine being 1·0200); and its solid contents, not perfectly dried, did not exceed 25 grains from the wine pint. Finding that no precipitate was occasioned by adding nitric acid to the extract dissolved in a little water, I tried to discover urea in another portion of the same urine by the more accurate test which I have proposed of distillation. The distilled fluid very slowly restored the colour of reddened litmus paper; but did not precipitate muriate of lime. It could, therefore, have contained nothing more than a mere trace of carbonate of ammonia, which is always abundantly produced by the distillation of natural urine. As the patient recovered, the urea was very gradually and slowly restored to the urine. These experiments confirm the curious discovery of Mr. Rose; to which it may be added, that the urine of Dr. Holme's patient did not contain an appreciable quantity of uric acid. I was sorry that other engagements interfered at the time, and prevented me from determining exactly the nature of its other contents.

" An opportunity lately occurred to me of ascertaining precisely the proportion of urea in the urine of a patient labouring under diabetes mellitus in its most perfect form, before the disease was influenced either by diet or medicines. A wine pint gave 651 grains of solid extract; and of this, only 16 grains, or $\frac{1}{14}$ part, were urea. No urea could be discovered by the action of nitric acid. The processes employed in detecting it, were those which I have described in the Medico-Chirurgical Transactions, vol. ii. p. 123; and in the Annals of Philosophy, vol. i. p. 31.

" P.S.—I have often been applied to of late to know where the hydrometer for taking the specific gravity of urine may be purchased. It may be acceptable, therefore, to some of your readers, to know that a more easy method, (and a preferable one, as it requires a much less quantity of urine, and no calculation,) is to weigh the urine in a bottle which holds exactly 1000 grains of distilled water at 60° Fahr. up to a mark on the neck. Bottles of this sort, with a proper counterpoise, and decimal weights in a case, may be had in London, of Mr. Knight, 41, Foster Lane, Cheapside; and, I dare say, of Mr. Accum, in Compton Street, and other makers of chemical apparatus."

PART II.

ANALYTICAL REVIEW.

I.

Précis Elémentaire de Physiologie. Par M. MAJENDIE. Tome 1er. 8vo. pp. 326. Paris, 1816.

THIS work is the production of an author, with whose talents and researches we have already endeavoured to make our readers acquainted*. If we shew any anxiety to examine its contents, it is because men of much original investigation, like M. Majendie, have commonly so little inclination to mix the discoveries of others with their own, that they are seldom in a hurry to produce a systematic treatise. A further apology for our noticing this book so soon after its publication in France, may be expressed by a few appropriate and just remarks on the importance of physiology as a branch of medical science.

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* See *Repository,* vol. i. p. 211. vol. ii. p. 155.

The path which John Hunter took for the advancement of our science, was by physiological investigation; and the practical improvements which he made, were not stumbled upon by accident; but emanated, almost without exception, from his physiological discoveries. He laboured to find out the laws of living actions, and not specifics for the cure of diseases. What more reasonable than to expect that a knowledge of the healthful, should facilitate the understanding of the diseased functions of the living body? What more probable than that we should learn to treat diseases best by endeavouring to ascertain the nature of them? It is true that our most powerful remedies are employed empyrically; but all rational practice of the healing art is founded on the basis of physiology.

Physiology, or the science which considers the phenomena peculiar to living bodies, is divided by M. Majendie into vegetable, animal*, and human. The last of these divisions forms the subject of the present treatise; the other two not being sufficiently advanced to allow of an elementary work being written on physiology in general.

Whatever is capable of acting on our senses, we call a *body*. Bodies are ponderable or imponderable: the former, as solids, fluids, and gases, can act on several of our senses, and their existence is well ascertained; the latter can in general act only on one of our senses, as light, heat, electric fluid; and their existence is so little proved, that it is possible they are only properties or modifications of other bodies.

Bodies are simple or compound. Amongst the simple are at present reckoned, oxygen, chlorine, iodine, fluorine, sulphur, hydrogen, boron, carbon, phosphorus, azote, and thirty-eight metals. These are seldom met with in nature. Compound bodies are every where to be found, and are divided into two classes. Those, the composition of which is constant, are called inorganic; those, the elements of which are continually varying, are called living, or organic. They differ from each other in their form, composition, and the laws which regulate them; and these differences are pointed out by M. Majendie in a concise table. Inorganic bodies are submitted entirely to the laws of chemical affinity and attraction; living bodies are governed partly by these laws and partly by an unknown agent or power. The two classes of living bodies, vegetables and animals, are thus contrasted:

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* M. Majendie uses *comparative* as synonimous with *animal* physiology, which appears to be an error. *General* and *comparative* physiology are more nearly the same thing; we compare different animals with each other, with man, or with vegetables, considering their living functions.

Vegetables—are fixed to the earth, have carbon for the chief basis of their composition, are formed of four or five elements, are surrounded by their food, which they take without preparation.	*Animals*—are moveable on the surface of the earth, are often composed of eight or ten elements, with azote for their principal base, have no need to act on their food to render it proper to nourish them.

The solids and fluids of animals are formed from the various combinations of the simple bodies which enter into their composition; but we are wholly ignorant of the laws or powers by which these combinations are effected.

The organic solids are classed under the title of tissues or systems, and the following is given as an improvement on the classification of Bichat:—1. cellular; 2. vascular *(arterial, venous*, and *lymphatic)*; 3. nervous *(brain, nerves, ganglia)*; 4. osseous; 5. fibrous (*tendon, fibro-cartilage*, and *skin*); 6. muscular; 7. erectile?; 8. mucous; 9. serous; 10. epidermoid (*hair* and *cuticle)*; 11. parenchymatous.—These systems, intermixed with each other, and with the fluids, compose, according to the language of M. Majendie, the organs, or instruments, of vitality.

The fluids of animal bodies bear a great proportion to the solids; in man they are as nine to one at the adult age. The fluids of the human body have been very variously classified by different writers, according to their physical or chemical properties; but, as these are so frequently varying, to arrange them, as far as possible, in reference to the manner in which they are formed, seems a less objectionable plan. Blood, lymph, chyme, and chyle, cannot be thus classed; but all the other fluids may perhaps be included under the three heads—perspiratory, follicular, and glandular.

If we employ the term *vital power*, we must take care not to place too much value upon it: it can only signify the unknown cause of the phenomena of life.

> "Physiologists," observes M. Majendie, "tell us, that as attraction presides over the changes which take place in inorganic bodies, so the *vital power* directs the modifications of those which are organic. But they fall into a strange error in making such a comparison; the laws of attraction are perfectly known to us, whilst those of the *vital power* are wholly unknown. Physiology is at this moment in the same state as the physical sciences were before the

time of Newton, and must continue so until some man of superior genius shall unveil to us the laws of the *vital power*, the same as Newton did the laws of attraction. The glory of this great philosopher was not, as many have supposed, in discovering attraction, but in shewing that *attraction operates directly as the mass, and inversely as the square of the distance.*"—p. 15.

The long list which has been recently given of the vital properties of the solid parts of our body, are rejected by M. Majendie as being, in part, functions of organs, and, in part, gratuitous suppositions for the purpose of explaining the phenomena of life. Those only can be strictly vital properties, which are common to all living matter.

With respect to fluids, physiologists have acted much more wisely, by judging of their possessing life from the phenomena which they present—their powers of producing heat, remaining fluid whilst forming a part of the body, becoming organized, &c.

M. Majendie reduces all the phenomena of life, when analyzed to the utmost, under *nutrition* and *vital action*, which are reciprocally dependant on each other. The liver secretes bile in virtue of a power which is peculiar to it; the kidney secretes urine for no clearer reason; voluntary muscles under certain conditions contract. These are instances of vital action, the mechanism of which is unknown. To ascertain the physical properties of organs; to observe the sensible effects of living actions; and to study how both these concur to the formation of a living system; are the objects of physiology. For these purposes the phenomena of life are divided into different classes or functions:—1. *relative*, or those which are intended to make the individual acquainted with surrounding bodies; 2. *nutritive*, or those which are intended for the purposes of growth; 3. *generative*, for the re-production of the species. Thus much, M. Majendie gives as preliminary doctrines, and then proceeds to consider the relative functions which occupy the rest of this volume.

The relative functions consist of the senses, the intellect, voice, and motion; which have distinct organs for their production. Vision, hearing, smelling, taste, and touch, are the senses destined to receive impressions from external objects, and transmit them to the intellect. M. Majendie has controverted some received opinions respecting vision, and introduced many new remarks. The secretion of the Meibomean glands, which has been considered of an unctuous nature, to prevent the tears overflowing the margin of the eye-lids, he asserts to be albuminous; and believes it to be soluble in the tears. The chief use of this fluid appears to be to favour the friction of the lids over the globe of the eye; and the follicles which secrete it are much more numerous in the upper eye-lid, which enjoys more extensive motion, than in the lower. The eye-lids, according to M. Majendie, touch each other by the whole of their margins, which are plane; and during sleep, when tears cannot evaporate, they reach the *puncta* by a course corresponding to the place where the conjunctiva is reflected from the surface of the eye to line the eyelids. (p. 45.) To exhibit the images of objects painted on the retina, M. Majendie employs the eyes of white rabbits or pigeons, which require no farther preparation than the removing of the muscles and fat, as the sclerotica is almost transparent, and the choroid, which is destitute of blood after death, is so thin as to offer no obstacle to the passage of light. The room does not require to be darkened, to make this experiment; if the cornea be directed towards bright objects, the image of them upon the retina is distinctly seen through the sclerotica and choroid. This simple discovery has, in the hands of M. Majendie, been employed for several interesting purposes. When a little of the vitreous or aqueous humour was evacuated, the image on the retina was found imperfect. The size of the image, in the entire eye, was ascertained to be proportionate to the distance of the object. When all the aqueous humour was evacuated by a puncture through the cornea, the image was not only less clear, but occupied a greater space on the retina; the whole of the cornea being afterwards removed, rendered the image still less brilliant without altering its dimensions; removing a circular portion of the iris, so as to enlarge the pupil, produced an increase in the size of the image. When the lens was depressed or extracted, an obscure image was still formed, at least four times as large as what was formed in the entire eye. When the lens and cornea were removed, the vitreous humour and lenticular capsule only being left, the light which reached the retina had no relation to the form of the objects from which it proceeded. We have repeated some of these experiments, and assent to their accuracy; enlarging the pupil, after the cornea was removed, did not however perceptibly enlarge the image of the object, and the effects of removing the lens by extraction, and of depressing it, were not the same, the image, under the latter circumstances, being more distinct*. The most singular fact, is the distinctness of the image of the same object on the retina, at different distances; which seems to prove that the changes which we have hitherto thought necessary to take place in the eye to accommodate it to objects at different distances, and about the explanation of which so much ingenuity has been employed, does not take place at all. The eye is a perfect optical instrument.

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* In his "*Memoire sur un moyen très simple d'apercevoir des Images qui se forment au fond de l'Œil,*" published in 1813, M. Majendie does not mention the effect of depressing the lens.

Cutting the iris, in certain operations, has been attended with vomiting, but no pain; and M. Majendie, by irritating this membrane with a couching needle, has produced no motion in it. We have observed the inflamed iris to be excessively sensible, and even when in health it has sometimes seemed to give painful feelings when cut or torn. Some French physiologists state that they have produced contraction of the iris, in man and in animals, by galvanic excitation; and M. Nysten has observed the same effects on culprits, a short time after their death. In an instance where we saw this last experiment tried on a culprit who had been hung, violent motions in all the muscles of the system were, in succession, produced by a powerful galvanic apparatus; but directing the galvanic influence through the globe of the eye, was succeeded by no evident motion of the iris.

Amongst the extraordinary doctrines of a modern writer, is the assertion, that we employ but one eye at a time, when we fix our attention upon an object, to examine it. M. Majendie conceives it of much importance to perfect vision to use both eyes. Let the image of the sun be received upon a plane surface in a darkened room, and two pretty thick glasses of different prismatic colours be held before the eyes; if the sight be good, and both eyes equally strong, the image of the sun will be of a dull white colour, whatever be the colour of the glasses employed. If one eye be much stronger than the other, the image of the sun will be seen of the colour of the glass which is held before the stronger eye. (p. 73-4.) We certainly judge of the distance of objects by the eye in consequence of an exercise of the understanding; but, where both eyes are sound, the united action of them is absolutely necessary to judge accurately of distance. If a person lose one eye, a year will sometimes pass away before he can judge distinctly of the distance of objects placed before him. Cheselden's case, in which he restored vision to a youth who had been blind from his birth, is quoted by M. Majendie, and a remark added to it, which appears to us rather preposterous, "that the operation performed on this youth was not for cataract, but the incision of the membrana pupillaris." The existence of the membrana pupillaris has never been ascertained as a cause of blindness after birth, and we are therefore surprized to find so unfounded an opinion from so sensible a writer. In the fœtus, there is, as M. Majendie himself allows, no aqueous humour in the anterior chamber, before the rupture or absorption of the membrana pupillaris, whilst the posterior chamber is full of that humour, which proves that the organ that secretes the aqueous humour is situated in the posterior chamber. (p. 86.) If therefore the membrana pupillaris existed in Cheselden's case, the pupil must have been immoveable, and the iris in contact with the posterior surface of the cornea. But there is every reason to suppose, from what Cheselden says of the case, that the cornea was prominent with aqueous humour, and the iris moveable, as in common cases of cataract, without capsular adhesion.

The obscurity which hangs over the particular uses of the different parts of the internal ear, has not been at all diminished by the appearance of M. Majendie's treatise. What he has written upon hearing is indeed less interesting than what is to be found in some other works on physiology, as he has not introduced a comparative view of that organ in different classes of animals. A pulpy mass, contained in a membrane on which numerous branches of a nerve are ramifying, is an example of the most simple apparatus for hearing; and the complicated structure which is found in man and the higher classes of animals is for the purpose of conferring different degrees of excellence, or rendering the organ correspondent to the medium in which they live.

Upon the sense of smelling, we meet with little to copy, and nothing to find fault with. The uses of the nose in smelling have been the subject of some dispute. The loss of it by disease or accident has caused almost a complete loss of the sense; and Mr. Beclard, who is well known to us, informs us that he has restored the sense of smelling completely, in these cases, by the adaption of artificial noses so as to supply the deficiency. The sense of smelling is naturally much less perfect in man than in animals; and, in civilized society, it serves less for the purposes of self-preservation than most of our other senses. It is, of all our senses, the one which is most frequently interrupted, and with the least inconvenience to us.

Different parts of the organ of taste have peculiar kinds of sensibility for sapid bodies, some of which act more particularly on the tongue, others on the teeth and gums, others on the palate or pharynx. The taste which bodies leave behind them occupies sometimes the whole of the mouth, sometimes only particular regions of it. Acrid bodies, for example, leave an impression in the pharynx; acids affect chiefly the lips and teeth; peppermint leaves a taste which exists at the same time in the mouth and in the pharynx. (p. 125.)

M. Majendie wishes to distinguish the sense of tact from the touch. The former, he says, is, with few exceptions, diffused over all our organs, particularly mucous and cutaneous surfaces, and the parts in which it is exercised are simply in contact with bodies without moving over their surfaces. We judge of temperature by the tact: those bodies which abstract calorie from us, we call cold; those which yield it to us, hot. But our judgments of temperature are far from being exact, as to the quantity of caloric we yield or receive; without knowing it, we make a comparison between the temperature of ourselves and that of the atmosphere, so that a body colder than ours, but warmer than the atmosphere, will feel hot to us, although in reality it abstract caloric from us when we touch it. If the hand is at rest on the surface of a body, it acts only as an organ of *tact:* to exercise the *touch*, it must be moved, to inform us of the dimensions or form of a body by passing over its surface, or its consistence and elasticity by compressing it, &c. Bichat first suggested this distinction between the *tact* and the *touch*, and has assigned with great ingenuity the differences between them*. The variations in the sense of the touch in the internal and external surfaces deserve to be as strictly noticed as those of taste; but it does not appear to us that they can yet be arranged under these two heads with any advantage. M. Majendie tells us that we acquire a knowledge of the consistence of bodies by the *touch;* whilst Bichat attributes our acquaintance with the hardness, moisture, or dryness of bodies to the *tact*.

There are internal senses which cannot be classed in any regular order. Except tendon, bone, ligament, &c. all parts of the body have the power of transmitting impressions to the brain, when touched by external bodies. All the organs can also transmit spontaneously a great number of impressions to the brain, without the intervention of any external causes. Of these, M. Majendie enumerates three sorts. 1. Those which arise when it is necessary for any organ to act, as hunger or thirst. 2. Those which accompany the action of any organ, as passing the urine, or the semen. Under this species we may include thought. 3. Those which follow the action of an organ, as a feeling of fatigue. Painful impressions, arising in consequence of diseased action, may be enumerated as a fourth species.

M. Majendie, after thus noticing each sense in particular, makes some observations on the senses in general, which leads him to speak of the nerves, the media by which all impressions, whether from external or internal senses, are conveyed to the brain. With the exception of the optic and accoustic nerves, we are absolutely ignorant of the disposition of the extremities of nervous filaments in the tissue of organs. The only explanation which the physiologist can give of the senses, consists in the application of the physical and chemical laws to the external organs of sense which are placed beyond the extremities of the nerves. When once we have arrived at the uses of the nerves in these functions, says the author, there will be no further explanation to give: (this is allowing the brain, however, to have too little share in them:) and for this purpose we must confine ourselves rigorously to the observation of phenomena. At all times some explanation of the action of the nerves has been framed. The ancients considered them as conductors of the animal spirits. When physiological science was made subservient to mechanical doctrines, the nerves were vibrating cords, although possessing none of the physical conditions necessary for vibrating. At the present day, when the minds of so many able men are directed to the study of imponderable fluids, electricity is thought to have a great share in the action of the senses and other functions. To lay aside all prejudice, we must arrange the function of the nerves amongst the *vital actions*, which, in the present state of science, are not susceptible of any explanation. (p. 146.) It is not very gratifying, when we take up a book with the hopes of adding to our information, to find so much trouble bestowed in order to convince us of our ignorance. M. Majendie's remarks on the sympathetic nerve tend to the same point. The ganglia and the filaments proceeding from it differ from nerves in colour, form, consistence, disposition, structure, and composition. Their vital properties have scarcely a greater analogy; you may prick or cut a ganglion, or tear it away altogether, without the animal giving any signs of being conscious of it. What reason, therefore, is there for considering the ganglia as forming a part of the nervous system? Would it not be more wise, and, above all, more advantageous to the future progress of physiology, to allow that at this moment the uses of the great sympathetic are entirely unknown? (p. 150.)

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* *Anatomie General*, tom. iv. p. 711.

The brain comes next to be considered, after the organs of sense and the nerves. The greater part of M. Majendie's general remarks upon it are rules and precautions to be observed in the study of its physiology. In regard to the functions which it fulfils in the animal economy; it is the organ of intellect; it is the source of all the means by which we act on external bodies; it establishes an ever-active relation between the different organs in the same body; or, in other words, it is the principal agent of sympathies. It is, however, as the organ of intellect that M. Majendie regards it here; and his remarks, though short, on account of the intellect forming a distinct branch of study, are much to the purpose. He adopts M. Tracy's arrangement of the innumerable phenomena of intellect: 1. *sensibility;* or the action of the brain by which we receive impressions, whether external or internal: 2. *memory;* or the faculty of reproducing impressions or sensations previouly received: 3. *judgment;* or the faculty of perceiving the relations between sensations: 4. *desires;* or volition:—all of which are but different modifications of feeling.

The history of the relative functions is concluded with an account of the organs of voice and motion, both of which are the result of muscular contraction. This, which has been commonly classed as a vital property, should, in the opinion of M. Majendie, be regarded as a function, since it is the result of the successive or simultaneous action of several organs, brain, nerves, and muscular fibre. We are obliged to pass quickly over an anatomical description of the larynx, that we may give sufficient attention to the mechanism of the voice, which we trust will prove to our readers the most interesting selection from M. Majendie's book:

If you take the larynx and trachea of an animal, or of man, and blow forcibly through them in the direction which the air takes in expiration, no sound is produced, except what arises from the friction of the air against the walls of these cavities. If, whilst you continue to blow, you approximate the arytenoid cartilages so that they touch each other by their internal surfaces, a sound will be produced analogous to the voice of the animal to which the larynx used in the experiment belongs. The sound will be more or less grave or acute, in proportion as these cartilages are pressed against each other with more or less force; and it will readily be seen in this experiment that the sound is produced by the vibrations of the inferior ligament of the glottis. A wound in the trachea, or in the larynx below the inferior ligaments of the glottis, destroys the voice; if, on the contrary, the wound intersects the epiglottis, or its muscles, the superior ligaments of the glottis, or even the upper part of the arytenoid cartilages, the voice continues. These, M. Majendie thinks, are sufficient reasons for determining, beyond a doubt, that the voice is produced in the glottis by the vibration of its inferior ligaments. Since these ligaments acquire the faculty of vibrating by the action of the thyro-arytenoid muscles, whenever these muscles are so circumstanced as not to contract, no voice will be produced. Hence, blowing through the trachea of a dead body causes no sound like the human voice. Hence, also, an act of volition is required for the production of sound; and paralysis of the muscles of the larynx is followed by a total loss of the voice. M. Majendie has conducted some further experiments for ascertaining the changes in the glottis which accompany the different tones of the voice. The glottis of a dog being exposed by an incision between the thyroid cartilage and os hyoides, its ligaments were observed to vibrate throughout the whole of their length, when grave sounds were produced, and the air in expiration occupied the whole extent of the glottis. In acute sounds, the opening of the glottis was considerably diminished, and the ligaments vibrated only at their posterior parts. In the most acute sounds the glottis was almost closed, and the ligaments vibrated to a still smaller extent. From the division of the laryngeal nerves, M. Majendie found that all the higher tones of the voice were lost, which is the effect that might have been expected, as the action of the arytenoid muscles, which are supplied by these nerves, are principally concerned in closing the posterior part of the glottis.

M. Majendie has, by these experiments, approximated to a physical explanation of the production of the voice. The larynx is analogous to a double reed, such as is used in certain wind-instruments of music, the tones of which are more or less acute, according to the length of the portion of reed which vibrates. This analogy, however, is just only to a certain point. The reeds of musical instruments are commonly rectangular, with one side fixed and the remaining three at liberty. The vibrating cords of the larynx have three sides fixed, and only one free. The tones of a vibrating reed are made higher or lower by varying the length of it: in the larynx it is the width of the vibrating cords which vary.

The different modifications of the voice in crying, articulating, speaking, and singing, are described by M. Majendie, with the addition of some novel and curious remarks. The explanation which he has offered of the art of ventriloquism, must be admitted by all physiologists. By constant experience, we gain a kind of instinctive knowledge that certain changes in sounds are produced by certain circumstances; that they become weaker and less distinct in proportion to their distance, &c. The voice of a man at the bottom of a well, reaches the ears of those who are at the top of it, with modifications dependant on the distance and the form of the canal through which it has passed. If, therefore, a person observe well these modifications, and endeavour to re-produce them, he will perform deceptions in accoustics which we can no more disbelieve, than we can avoid seeing objects enlarged when we look at them through a magnifying-glass. If means be at the same time employed to divert the attention of the hearer, the deception will be complete. The more talent the artist possesses, the more numerous the illusions which he will be capable of effecting; but we must not suppose, in the present state of science, that a ventriloquist produces vocal sounds, and articulates differently from other people. If he really pronounce without moving his lips, it is because he takes care to employ words in which there are no labial consonants; for these would inevitably require the movement of the lips for their formation. It may be said that the art of ventriloquism is, to a certain extent, the same to the ear as painting to the eye.

The voice undergoes great changes according to the age. In the infant, the larynx is remarkably small compared with the os hyoides and parts of deglutition; and the thyroid cartilage is not prominent in the neck. It retains nearly the same characters until puberty, when a general revolution takes place in the œconomy; the glottis increases in its dimensions, and the thyroid cartilage, more particularly in man, becomes prominent externally. At this time the voice experiences a remarkable modification, though much more in men than in women; it often acquires a degree of gravity and a peculiarity of sound which are quite new to it, and in general lowers its pitch a full octave. This is evidently owing to the developement of the larynx, and above all to the elongation of the lips of the glottis. Sometimes the voice is lost for a few weeks, or becomes very hoarse; after which it assumes the tone and pitch which are left during the rest of life.

The hearing bears so great a relation to the voice, that all our acquirements in the use of the latter depend upon the former. M. Majendie relates an instance which we have not elsewhere met with, of a young man, fifteen years of age, who had been deaf and dumb from birth, and was restored to his hearing by means of injections into the tympanum, through an opening in the membrana tympani. The sound of neighbouring bells, which he first distinguished, affected him much, and caused pain in the head, and vertigo. The next day he was sensible to the ringing of the bell in his apartment. After twenty days, he heard the voice of persons who spoke to him, and seemed delighted with it beyond measure. He was not satisfied with hearing them speak, but watched with his eyes the words as they came from the lips of his friends. His voice was soon afterwards developed. At first he could only form irregular sounds; and in a short time he could stammer a few words, but he pronounced them badly, as an infant would have done. It was a considerable time before he could pronounce words containing many consonants. The sound of a musical instrument, for which he had not been prepared, caused trembling and almost syncope, which were followed by the most lively expressions of pleasure, his coloured cheeks, sparkling eyes, hurried pulse, and respiration, indicating a degree of rapture bordering on delirium.—p. 244.

In treating of the attitudes and movements of the body, M. Majendie has made a more extensive application of the laws of mechanics to the organs which execute them than has hitherto been done. The relation which exists between the senses and the attitudes and movements, supply the subject of a distinct section. Gestures, or the movements which are intended to express our intellectual or instinctive feelings, are natural or social, instinctive or acquired. Natural gestures, or those which express joy, fear, grief, &c. are observed in the idiot, the savage, the blind from birth, as well as in the man who is possessed of all moral and physical advantages. The social gestures are acquired by the exercise of sight and intellect, and by intercourse with society. Those who are born blind are exactly in the same situation with respect to gestures, as the deaf from birth are with respect to the voice. These two phenomena mutually supply the place of each other; the deaf and dumb use gestures continually, and carry them to a high degree of perfection: the voice, on the contrary, is almost the only mode of expression with the blind; hence their taste for singing, &c. the energy which often marks their mode of speaking.

The sense of hearing is not without its influence on the movements of the body; it directs their repetition of them at certain intervals, or in correspondence with tones of music. Certain attitudes and movements, as those accompanying disease and bodily pain; also the influence of them shew internal sensations in producing these phenomena.

It may be affirmed, says M. Majendie, that volition is the cause which determines certain movements; but the muscular contraction necessary for their production, does not depend on that action of the brain; it is purely instinctive. We can move an arm or a hand; but it is impossible for us to make these muscles contract separately or together, if we have not an idea of some movement we wish to produce. We have, therefore, a right to conclude, that volition and the action of the brain, by which the contraction of muscles is directly produced, are two distinct phenomena; and the experiments of modern physiologists, particularly of Le Gallois, have clearly established this fact. It has been proved by their experiments, that volition is more particularly seated in the cerebrum and cerebellum; the immediate cause of motion, on the contrary, seems to be placed in the spinal marrow. Separate the spinal marrow from the brain by a section across it at the occiput, and movements of the limbs are still produced, without the influence of volition to determine and direct them. (p. 306.)

These appear to us the weakest arguments in M. Majendie's book. Whatever the interesting experiments of Le Gallois[*] prove, they are not applicable to the present question, which is "whether certain motions of the limbs are to be called instinctive or voluntary." There is no ground for comparison between the irregular contraction of muscles, which can be produced after decapitation, and the regulated movements of the limbs, which are attended by volition; and it is not at all necessary to remove the brain, to give examples of muscular action without volition, as these are constantly occurring under circumstances of disease. Instinctive movements are performed as perfectly the first time they are attempted, as at any future period. The rapidity and precision with which a musician uses his fingers upon the keys of a piano-forte, are acquired by much practice, and the patient exercise of volition; to call these movements instinctive, is to give a new meaning to the term.

A few remarks on the relation between the voice, instinct, and the passions; and the attitudes and movements of the body; occupy the concluding pages of this work.

Many writers think, that in forming an elementary system, they are called upon to give a history of all that has been done before them, and to detail the latest doctrines on each branch of the subject, however objectionable or untrue. M. Majendie has, in general, confined himself to an account of what he conceives to have been satisfactorily ascertained by others, or to be proved by his own researches. He shews us physiology, as it were, in all its nakedness; and he tells us, what is too true, that, as yet, we know very little about it. The most interesting parts of his book are certainly those which appertain exclusively to himself; but it is altogether written in language so pithy, forcible, and concise, that a translation of it would be an useful addition to the number of books which are requisite to be in the hands of the medical student.

PART III.

SELECTIONS.

(Postponed for want of Room.)

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[*] See the *Repository*, vol. ii. p. 7, 11.

PART IV.

FOREIGN MEDICAL SCIENCE AND LITERATURE.

PRACTICE OF MEDICINE.

I.—HAVING noticed the report of *Dr. Meglin*, of Colmar, on the employment of Atropa *Belladonna* in hooping-cough*, we are induced to lay before our readers the following translation of a paper on this subject, by *Dr. Raisin*, of Caen, which was read before the Société de Médecine of Paris, on the 19th March last†.

CASE I.

"A little girl, three years of age, of a stout make and ruddy complexion, had been ill, for a fortnight, with the hooping-cough. I had given her several ipecacuanha emetics: and she had taken, also, honied drinks slightly aromatic, combined with ipecacuanha in divided doses. The accessions, nevertheless, continued, became more frequent and at the same time more violent, and were followed by vomitings. I recollected that the Belladonna had been recommended for hooping-cough in the *Dictionnaire des Sciences Medicales*; and being convinced, from a number of cases, of the inefficacy of the means usually recommended in the treatment of this disease, I determined to employ the Belladonna. I ordered a third of a grain of the powdered root, mixed with six grains of sugar, to be taken twice a day. On the second day, the accessions were less frequent and less violent, and the child's sleep was also more composed. By following this plan, the cough continued to diminish, and the vomitings had entirely ceased. On the fourth day, I increased each dose to half a grain. In a fortnight the cough was insignificant, and in three weeks it had entirely ceased. I continued the Belladonna for five days longer; and although it is now more than three weeks since I left it off, yet the child has had no relapse.

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* Vide *Repository*, vol. v. p. 158.

† *Journal Genéral de Médecine*, tom. lv. p. 289.

CASE II.

"A little girl, eighteen months old, of a decidedly lymphatic temperament, had been afflicted for three weeks with the hooping-cough, of which the accessions were very violent, and threatened suffocation. She had taken, without any benefit, ipecacuanha emetics and lozenges, and honied drinks. I ordered a quarter of a grain of the powdered Belladonna, with sugar, to be taken morning and evening. Next day, the cough was less violent, and the accessions less frequent. The dose was then increased to half a grain. The accessions have been less frequent and less violent; but have not completely ceased, although the Belladonna has now been employed since the 28th November last. In other respects, the appetite is good, and the child preserves her gaiety.

CASE III.

"A little boy, four years old, with a fair skin, white hair, and a ruddy complexion, had been subject, for a fortnight, to violent accessions of this convulsive cough: he had vomited sometimes, and had had hæmorrhage from the nose. I immediately put him on a course of Belladonna, in doses of half a grain, morning and evening. He commenced on the 17th of January, in the evening. From the first night he slept well, and had no cough. His parents expected him to have a violent accession when he awoke; he had one, but very slight. The cough diminished daily; and, on the 27th of January, was almost entirely gone. He has continued the Belladonna, without increasing the dose; and is now completely cured, without the use of any other remedy. I have also given it to four other children; but as they are at a distance from the town, I have not been able to observe accurately its effects; they left it off too soon: the parents have, however, informed me that in the course of two or three days, the cough had considerably diminished.

OBSERVATIONS.

"The hooping-cough is one of those diseases for which an infinity of remedies has been proposed. There is hardly a mother who does not possess her own specific, and regard it as superior to all others. At this circumstance we cannot be astonished, if we reflect, that every one who has witnessed the sufferings of children attacked by this disease is anxious to procure them some relief, in every possible way. Moreover, the hooping-cough has this in common with all diseases which are of long continuance, and not of immediate danger; that the parents, not having patience enough to wait the result of a rational method, attempt different remedies.

During this period, the disease runs its course, and the last administered is always that which has cured.

" Hitherto, little has been done in medicine against the hooping-cough, except endeavouring to diminish the violence of its most alarming symptoms. It is for this, that slightly aromatic beverages, ipecacuanha in small doses, blood-letting, general or local, emetics, blisters, antispasmodics, are often combined, or employed by turns. Cinchona also becomes useful towards the end of the disease, and often procures a happy termination. But it must be confessed that although the best of these therapeutic methods be employed, the disease will nevertheless run its course, and often prolong itself, so as to render doubtful the state of the patient. We have indeed seen it, when thus prolonged, degenerate into chronic catarrh, and terminate in phthisis. This, however, may depend upon a peculiar state of habit in the patient; but if we have been able, in some way to *arrest* the disease, and consequently destroy the irritation which fixes upon the lungs, we have, to all appearances, prevented such a termination. Will the Belladonna afford this advantage in the treatment of hooping-cough? This is a question that can only be decided by experience. In the mean time, let us take a rapid view of the effects of the most energetic remedies, which have been recommended in the treatment of this disease, and compare them with those obtained from the use of the Belladonna.

" Blood-letting is admissible only in cases in which we have reason to fear a sanguineous congestion towards the brain, or in which there is danger of suffocation during the accessions of the cough. This, however, cannot be often repeated in a disease decidedly catarrhal, and which, for the most part, attacks children.

" Emetics commonly procure, for some days, a diminution in the violence of the accessions, and render them less frequent; but this is only transitory, and it is necessary to have recourse to them from time to time. I have even observed that, in some cases, they have not afforded any relief: it might also be dangerous to repeat them too often, as Mr. Gardien has remarked. Blisters are useful to break the spasms, and to operate a revulsion sufficient to secure the pulmonary organ; but as the spasmodic state is not permanent, they are but of feeble influence against the cough; and the advantage which we derive from them is confined to their revulsive action. Their value is, however, indubitable in cases where the patients suffer a continual oppression; the cough exists continually, and there is reason to fear that the disease is complicated with a catarrhal state of the lungs. The lichen *islandicus* and *pixidatus*, so much vaunted in hooping-cough, have not, perhaps, afforded *relief*, except in cases of a similar complication.

"Cinchona is only useful towards the termination of the disease, when the weakness is great, and the patient troubled with a slow fever. I obtained particular benefit from it, in the case of a child, ten years old, attacked with the hooping-cough, accompanied with fever, which had a considerable increase every evening. Given in powder, in doses of half a drachm, repeated every third hour in the intervals of the paroxysms, it arrested them in a short time, and the cough soon terminated. But here it is evident that the bark acted only against the complication.

"Hooping-cough being evidently of a convulsive nature, it is perhaps among the narcotics that an efficacious remedy should have been looked for. Opium, indeed, affords relief; and probably those syrups so highly extolled owe to it their reputation, as it forms their base. But as its long continued employment might determine congestions of blood towards the brain, and certainly occasions constipation, it is soon necessary to diminish its quantity, and even leave it off for a time. It is true that we may prevent constipation by occasionally administering glysters and gentle laxatives. Nevertheless, I am not certain that this disease can be cured by opium, given with the requisite caution. I do not take notice of *assafœtida*, *conium*, *Spanish flies*, combined with cinchona, or *oxyd of zinc*, which some authors have recommended, because I have not tried them myself.

"Belladonna, although it acts in the same manner as opium upon the nervous character of hooping-cough, yet, does not appear to me to have its incoveniences. The first effect I have constantly observed, is a more composed sleep, and a speedy and constant diminution in the violence of the accessions, which also become less frequent. On the second day, these effects were manifest in all the cases in which I employed it; and in the third case, they were visible after the first dose; and I think that in this case it cannot be denied that the Belladonna has effected a complete cure. Continued for any time, it does not occasion costiveness; at least, I have not observed it in my patients. The second case also proves that the Belladonna may be given for a considerable time in small doses, without deranging any of the functions of the animal economy.

"Two of the cases which I have presented, seem to give hopes that the Belladonna may abridge the term of the disease, which is the opinion of M. Marc, in the *Dictionnaire des Sciences Medicales*. If it did not succeed so completely in the second case related by me, may not this be attributed to the mode in which this drug was prepared? (I will explain this afterwards.) But even if the Belladonna should not arrest the disease in every case, it will, nevertheless, be a valuable acquisition if it has constantly the power of moderating the cough, and preventing that state of suffocation which seems at each accession to endanger the life of the patient.

" Belladonna appears to have been employed more frequently as an external than as an internal remedy. The root and leaves had been applied to scirrhous and even cancerous tumours; and it was after the good effects obtained from it in this mode, that some practitioners, as Alberti, Juncker, and Cullen, were induced to give it internally in scirrhous affections of the mammæ, intestines, and of the womb.

" It was particularly towards the end of the last century, that the internal employment of Belladonna was cried up, with a kind of enthusiasm, against hydrophobia, epilepsy, and mania. The pastor Muench and his pupils extolled it with ridiculous exaggeration. Although Dr. Greding, of Waldheim, in Saxony, obtained some favourable results from its employment in the two latter diseases, yet, new experiments are necessary to confirm its efficacy in the cases in which he employed it.

" The trials which have been made with this substance in hooping-cough, seem to promise more certain success. The first attempts are due to M. Schæffer, a distinguished practitioner of Ratisbon. M. Hufeland and several other physicians have since employed it; and Mr. Wetzle, during an epidemic hooping-cough, which reigned in Augsburg, in 1810, treated thirty children with Belladonna, and cured them all in the space of from eight to fifteen days, from the time they first took it.

" As to its mode of preparation, Muench and Murray recommend choosing roots two years old; and drying them, as well as the leaves, in the shade, without the aid of fire. It was perhaps owing to the want of this precaution that the success was less in the second case. The druggist to whom the prescription was sent, had none of the Belladonna; he procured some of the fresh root, which he dried in an oven. I am also ignorant whether the root was two years old.

" The Belladonna may perhaps be advantageously employed in other cases. I gave it, with decided advantage, to a lady, fifty years of age, of a delicate constitution, subject to an irritating cough, which weakened her considerably, and sometimes caused vomitings of slimy matter. Narcotics alone were able to calm it. Latterly, these had no effect on this cough, which renewed itself, as if it kept a quintidian period. The face became red, the eyes prominent; and one of these accessions was followed by mucous excretions mixed with blood. The Belladonna composed it, as if by enchantment. May it not be employed for that irritating cough which precedes pulmonary phthisis?

" In calling the attention of practitioners to the employment of Belladonna in hooping-cough, I would beg that, before using it, they would determine whether the mode of drying recommended by Murray and Muench is to be preferred; whether the root of two years is the best; and what difference soil or climate may have upon its energy; to ascertain how long it will retain its properties unimpaired after drying; and, lastly, to determine, with the greatest possible precision, what are its proper doses.

" This latter point appears to me to merit especially the attention of practitioners. Indeed, if we compare the doses given by M. M. Schæffer and Wetzler, we shall perceive a remarkable difference. By the formula of the former, in giving the smallest doses which he mentions, we shall give, in twenty-four hours, eight or nine grains, at least, of the powdered Belladonna to children under three years of age; whilst, by the formula of the latter, one grain only, divided into two doses, will be given in twenty-four hours. I have followed the method of M. Wetzler, which consists in giving, to children of a year old, a quarter of a grain, morning and evening, with a sufficient quantity of sugar; to children under two years, rather more than a quarter of a grain; to children of from two to three years, a grain in two doses; and to those from four to six years, a grain and a half. In two or three days the powder may be increased, so that the strongest dose for the youngest children may be one grain; and for the eldest, three grains in twenty-four hours. Those who would wish to repeat these experiments must not forget that Dr. Greding carried the dose of the powdered leaves to ten grains in the day, in cases of epilepsy. One of his patients was seized with a blindness for three weeks; but it is evident that this is too strong a dose, and that four grains is the maximum, which we must not exceed.

" These details may perhaps be considered minute, but I shall be pardoned if it be considered that the Belladonna is one of those powerful remedies which must be handled with prudence, and the employment of which in medicine is not yet fixed; that the smallest circumstances in the mode of administering it may totally change its results; in short, that according to the dose in which it is given it may either prove a useless drug, a powerful medicine, or a rank poison.

" P. S. Since reading the above Memoir to the Society of Medicine of Caen, I have had occasion to give the Belladonna to two children only, attacked with hooping-cough, and with the same success. The youngest, four years of age, after taking it for five days, had only one accession of the cough during the night."

A METEOROLOGICAL TABLE,

From the 21st of May to the 20th of June, 1816,

KEPT AT RICHMOND, YORKSHIRE.

230 Miles NW from London.

D.	Barometer.		Therm.		Rain Gage.	Winds.	Weather.
	Max.	Min.	Max	Min.			
21	29 66	29 65	68	41		ENE.	1 Sun.... 2 Cloudy...
22	29 72	29 70	58	40		NE.	1 Cloudy...
23	29 74	29 68	56	42		NNE..	1 Cloudy.. 2 Sun...
24	29 57	29 43	68	47		NNE..	1 3 4 Cloudy... 2 Sun.
25	29 63	29 54	62	38	12	Vble.	1 3 R.. 2 Sun. 4 Starl...
26	29 70	29 68	61	42	08	SW..	1 Sun... 3 Cy... 4 Rain.
27	29 82	29 75	64	43		NE..SE..	1 Cloudy.. 2 Sun.
28	29 73	29 73	61	41		S..WSW..	1 3 S.. 2 Cy.. 4 Starl...
29	29 59	29 52	70	50		SW..SE..	1 Sun... 3 Cloudy..
30	29 57	29 51	62	39		WNW..	1 Sun...
31	29 63	29 58	63	40		W..	1 Sun.. & Sh. 2 Sun...
1	29 64	29 52	65	53	03	WSW..SW...	1 3 S... 2 R. 4 Moon...
2	29 64	29 55	66	47		SW...WNW..	1 3 Sun... 2 4 Cloudy..
3	29 67	29 59	61	46		WNW...	1 Sun...
4	29 59	29 51	60	44		WNW...	1 Sun..
5	29 48	29 39	60	37	14	NW..	1 C.. 2 S.. 3 R.. 4 Mn...
6	29 60	29 32	57	41	12	NW...W.	1 Cy.. 2 Sun.. 4 Rain..
7	29 23	29 08	62	43		wsw...wbn..	1 Cloudy.. 2 Sun..
8	29 06	29 96	60	41		WNW...	1 Sun.. 3 Showers.
9	29 24	29 12	59	43	16	WNW...	1 Sun.. & Showers..
10	29 55	29 52	60	38		NW...	1 Sun.. & Sh. 3 Sun...
11	29 67	29 64	70	48		SW.	1 Sun.. 3 Cloudy..
12	29 61	29 60	74	54		SW...	1 Sun.. 3 Cloudy..
13	29 68	29 60	62	46	06	SW..	1 4 Cy.. 2 R. 3 S.
14	29 74	29 72	69	43		N..NE..	1 Sun..
15	29 73	29 71	65	40		NE..N.	1 Sun..
16	29 71	29 67	65	36		NNW..ENE..	1 Sun...
17	29 66	29 55	68	40		SW..E.	1 Sun...
18	29 61	29 58	74	50		SE..SW..	1 Sun... 3 Cloudy...
19	29 73	29 72	69	43	10	SW.	1 Showers.. 3 Sun...
20	29 80	29 76	73	43		SW.WNW..	1 Sun...

THE quantity of rain during the month of May was 1 inch 29-100ths. The season is very backward; vegetation, in many instances, being nearly a month later than last year.

Observations on Diseases at Richmond.

Although the weather has been generally cold in the nights, and sometimes hot in the day, during this last period, yet the town and district have been remarkably healthy: indeed there has been no complaint that could be called a prevailing disease. Varicella is beginning to make its appearance; and Hooping-Cough has nearly ceased. The following disorders have been under treatment: Anasarca, Asthma, Dyspepsia, Febris Catarrhalis, Febris Simplex, Mania, Obstipatio, Otalgia, Paralysis, Pneumonia, Podagra, and Rheumatismus.

METEOROLOGICAL TABLE FOR LONDON,

From the 20*th of MAY, to the* 19*th of JUNE,* 1816,

By Messrs. HARRIS & Co.

Mathematical Instrument Makers, 50, *High Holborn.*

M.	D.	Therm.			Barom.		Rain Guage	De Luc's Hygrom. Dry.		Damp.		Winds.		Atmo. Variation		
	20	52	63	47	29^9	30				1	1	E	NE	Fine	—	—
◐	21	53	64	44	29^9	29^9		0	0	0	0	E	NE	Fine	—	—
	22	59	62	44	29^9	29^9			0	1	0	N	NNE	Fine	—	—
	23	55	60	49	29^9	29^9				2	6	NNE	NE	Fine	—	—
	24	51	56	47	29^8	29^9				5	7	NE	N	Clo.	Rain	Clo.
	25	50	60	42	29^8	29^9	30			6	5	SW	NW	Clo.	—	Rain
	26	49	49	42	30^1	30^1	05			4	3	W	SW	Fine	—	—
	27	47	51	48	30^1	30^1				2	5	NE	NE	Clo.	—	—
	28	51	62	48	30^1	30^1				6	5	NE	S	Clo.	Fine	—
○	29	50	61	55	30	29				5	5	S	S	Clo.	—	—
	30	57	66	54	29^9	29^8				4	4	N	N	Fine	—	—
	31	57	63	50	29^8	29^9				5	3	NE	NNE	Fine	—	—
	1	55	67	59	30	30				2	3	NNE	N	Fine	—	—
	2	62	71	52	30	30			2	5		NW	NW	Fine	—	—
	3	60	67	50	30	30^1		0	0	0	0	WNW	W	Fine	—	—
	4	57	69	50	30^1	29^9		0	0	0	0	W	W	Fine	—	—
	5	57	60	45	29^9	29^7		0	0	0	0	W	NNW	Fine	Rain	Clo.
◑	6	57	54	49	29^8	29^9	11			1	1	NW	W	Fine	Sho.	Clo.
	7	52	54	50	29^7	29^6				2	2	W	WSW	Clo.	Sho.	—
	8	57	57	48	29^5	29^4	02			3	5	SW	W	Clo.	Sho.	Clo.
	9	49	58	45	29^2	29^4				7	3	N	W	Rain	Fine	—
	10	49	51	45	29^6	29^8	07			3	4	NW	NW	Fine	Rain	Clo.
	11	51	51	45	29^9	30^1				2	1	N va	ESE	Fine	—	—
	12	51	63	49	30^1	30^1	19	0	3	0		S	SSW	Fine	—	—
	13	60	66	55	30^1	30		1	0		0	SW	WSW	Fine	—	—
	14	50	61	49	30	30				2	3	N va	NE	Rain	Clo.	—
●	15	52	59	48	29^9	30	06			3	2	N va	N va	Clo.	—	—
	16	54	57	47	30	30		0	0	0	0	NNE	N	Fine	—	—
	17	53	60	50	30	29^9			0	3	0	E	SW	Clo.	—	—
	18	58	62	57	29^9	29^9		1	0		0	SW	S	Fine	—	Rain
	19	61	65	57	30	30			0	2	0	S	SW	Fine	—	—

The quantity of Rain during the month of May, is 1 inch 16-100ths.

BILL OF MORTALITY *from May* 21, *to June* 18, 1816.

		May 28.	June 4.	June 11.	June 18.	
CHRISTENED.	Males	218	262	257	246	
	Females	188	237	249	228	
		406	499	506	474	Total, 1885.
BURIED	Males	191	176	222	172	
	Females	201	193	201	175	
		392	369	423	347	Total, 1531.
OF WHOM HAVE DIED	Under 2 Years.	91	106	109	105	
	Betw. 2 and 5	46	33	43	35	
	5 and 10	13	16	10	20	
	10 and 20	14	10	12	11	
	20 and 30	29	27	35	22	
	30 and 40	41	35	44	27	
	40 and 50	46	38	48	32	
	50 and 60	34	33	45	30	
	60 and 70	29	32	41	27	
	70 and 80	26	24	23	21	
	80 and 90	19	11	10	13	
	90 and 100	4	4	2	4	
	105			1		
SMALL POX		8	3	6	13	Total 30.

A REGISTER OF DISEASES

Between MAY 20th, and JUNE 19th, 1816.

DISEASES.	Total.	Fatal.	DISEASES.	Total.	Fatal.
Abortio	14		Epilepsia	5	
Abscessio	21	1	Epistaxis	22	
Acne	6		Erysipelas	41	
Amaurosis	1		Erythema *læve*	7	
Amenorrhœa	25		Erythismus *Merc*	1	
Amentia	2		Febris *intermittent*	28	
Anasarca	23		—— *catarrhalis*	34	
Aneurisma	3	2	—— *Synocha*	32	
Anorexia	9		—— *Typhus mitior*	14	1
Aphtha *lactentium*	14		—— *Typhus gravior*	1	
—— *anginosa*	1		—— *Synochus*	22	2
Apoplexia	15	6	—— *Puerpera*	3	
Ascites	11	1	—— *remit. Infant*	13	
Asthenia	25		Fistula	5	
Asthma	30	4	Furunculus	7	
Atrophia	4		Gastritis	2	
Bronchitis *acuta*	12	1	Gastrodynia	29	
—— *chronica*	10		Gonorrhœa	17	
Bronchocele	4		Hæmatemesis	4	
Calculus	1		Hæmaturia	5	
Cancer	3	2	Hæmoptöe	21	1
Carbunculus	7		Hæmorrhois	37	
Cardialgia	5		Hemiplegia	6	1
Catarrhus	134		Hepatalgia	5	
Cephalalgia	32		Hepatitis	28	
Cephalæa	11		Hernia	2	
Chlorosis	7		Herpes *Zoster*	6	
Chorea	3		—— *circinatus*	1	
Cholera	11		—— *labialis*	8	
Colica	14	1	—— *præputialis*	4	
—— *Pictonum*	2		Hydrarthyrus	1	
Contractura	6		Hydrocele	2	
Convulsio	13		Hydrocephalus	12	9
Coryza	1		Hydrothorax	4	2
Cynanche *Tonsillaris*	58		Hypochondriasis	7	
—— *maligna*	4		Hysteralgia	5	
—— *Trachealis*	4	1	Hysteria	27	
—— *Parotidea*	18		Icterus	17	1
—— *Laryngea*	2		Impetigo *figurata*	2	
Diabetes	2		—— *sparsa*	1	
Diarrhœa	81		—— *erysipelatodes*	4	
Dysenteria	14	3	—— *scabida*	3	
Dyspepsia	121		Ischias	2	
Dyspnœa	21		Ischuria	7	
Dysuria	7		Lepra	3	
Ecthyma	7		Leucorrhœa	24	
Eczema	2		Lichen *simplex*	5	
Eneuresis	2		Lithiasis	1	
Enteritis	6		Lumbago	8	
Entrodynia	29		Mania	14	

DISEASES.	Total.	Fatal.	DISEASES.	Total.	Fatal.
Melancholia	7		Psoriasis *inveterata*	14	
Menorrhagia	22		Purpura *simplex*	1	
Miliaria	4		Pyrosis	5	
Morbi *Infantiles**	133	6	Rachitis	3	
——— *Biliosi**	93		Rheumatismus *acutus*	47	
Nephralgia	2		——— *chronicus*	53	
Nephritis	3		Roseola	1	
Neuralgia	13		Rubeola	77	
Obstipatio	41		Scabies	48	
Odontalgia	17		Scarlatina *simplex*	14	
Ophthalmia	47		——— *anginosa*	19	
Otalgia	2		Scirrhus	5	
Palpitatio	11		Scorbutus	2	
Paralysis	11		Scrofula	29	
Paronychia	6		Spasmi	26	
Pericarditis	2		Splenitis	1	
Peripneumonia	15		Strictura	8	
Peritonitis	3		Strophulus *intertinctus*	4	
Pertussis	29	2	——— *confertus*	3	
Phlegmasia *dolens*	5		Sycosis *menti*	1	
Phlogosis	16		Syncope	4	
Phrenitis	4		Syphilis	44	
Phthisis *Pulmonalis*	44	18	Tabes Mesenterica	8	1
Plethora	14		Tetanus	1	1
Pleuritis	30		Tic Doloreux	1	
Pleurodyne	3		Tympanites	1	
Pneumonia	35	3	Vaccinia	95	
Podagra	11		Varicella	13	
Polypus	1		Variola	34	9
Porrigo *larvalis*	5		Vermes	29	
——— *scutulata*	5		Vertigo	36	
——— *favosa*	4		Urticaria *febrilis*	14	
Prolapsus	6		——— *evanida*	2	
Prurigo *mitis*	11		——— *tuberosa*	1	
——— *senilis*	6				
——— *podicis*	1		Total of Cases	2739	—
Psoriasis *guttata*	6		Total of Deaths	......	79

* *Morbi Infantiles* is meant to comprise those Disorders principally arising from dentition or indigestion, and which may be too trivial to enter under any distinct heads; *Morbi Biliosi*, such Complaints as are popularly termed *bilious*, but cannot be accurately classed.

Observations on Prevailing Diseases.

THE variableness and general coldness of the month have kept up the same class of diseases on which we had occasion last to report.

Catarrhal affections have been more common, and often very severe; frequently terminating in inflammation of the *bronchia*.

The great atmospheric changes which have taken place have produced many severe cases of *Pleuritis;* but attacks on the lungs are much more rare, nor have they been usually dangerous.

Pertussis is on the decline; but it still manifests the same aggravated form, and leaves the patients in a very exhausted state. The exhibition of the cinchona and change of air in the latter stage of the disease have been strongly indicated, and tried with great advantage.

Rubeola is more rife; and, although we have no fatal cases reported, yet, we have heard of several occurring in other Gentlemen's practice; and the last four Weekly Bills of Mortality contain ninety-seven deaths from measles.

The mortality from *Variola* in the present Register is higher than one in four:—a most melancholy proportion, and an unhappy proof of the perverseness of mankind! But it should be observed, that in several of these cases, the hooping-cough accompanied the small-pox.

A fatal case of *Phthisis pulmonalis* appeared to have been induced by a common catarrh. It ran its course in the short space of three weeks. No other disease was detected upon examining the corpse, except a great number of miliary tubercles imbedded in the vascular parenchyma.

Carcinoma caused the death of a woman at the early age of twenty-eight. It had attacked the uterus and bladder. *Menorrhagia vitior* attended the disease.

Two of the cases of *Cynanche parotidea* were of boys about nine years of age; they were marked by a singular translation of morbid irritation. About the second day after the attack, the tumid state of the parotid glands suddenly subsided: in one, it produced the most alarming delirium; in the other, a most distressing retching, which lasted for twelve hours, with abdominal tenderness and strong spasmodic contractions: the former was relieved by leeches to the temples, blister to the back, purging, and pediluvia; the latter, by bleeding from the arm, blistering, fomentations, and purging. Several strong doses of calomel, aided by castor oil and glysters, were required to counteract the inverted action of the bowels. The cause of these dangerous translations was the imprudence of the parents allowing their children to run about in the open air, exposed to the influence of an easterly wind, under the idea that the disease they laboured under was too trifling to require any precautions.

Monthly Prices of SUBSTANCES *employed in* PHARMACY.

		S.	D.
Acaciæ Gummi elect.	lb.	4	0
Acidum Citricum - - -	-	32	0
—— Benzoicum -	unc.	6	6
—— Sulphuricum -	P. lb.	0	9
—— Muriaticum - -	-	2	0
—— Nitricum - -	-	4	0
—— Aceticum - -	cong.	5	0
Alcohol - - -	M. lb.	5	0
Æther sulphuricus - -	-	10	6
—— rectificatus - -	-	14	0
Ærugo - - -	lb.	7	6
Aloes spicatæ extractum -	-	7	6
— vulgaris extractum -	-	5	0
Althææ Radix -	-	1	6
Alumen - - -	-	0	6
Ammoniæ Murias - -	-	2	6
—— Subcarbonas -	-	4	0
Amygdalæ dulces -	-	4	6
Ammoniacum (Gutt.) - -	-	9	6
—— (Lump.) -	-	5	0
Anthemidis Flores - -	-	2	3
Antimonii oxydum - - -	-	7	0
—— sulphuretum -	-	1	3
Antimonium Tartarizatum	-	8	0
Arsenici Oxydum - - -	-	1	6
Assafœtidæ Gummi-resina -	lb.	5	6
Aurantii Cortex - -		3	6
Argenti Nitras - - -	unc.	7	0
Balsamum Peruvianum -	lb.	34	0
—— Tolutanum -	-	24	0
Benzoinum elect. - -	-	12	0
Calamina præparata - -	-	0	6
Calumbæ Radix - - -	-	3	0
Cambogia - -	-	10	0
Camphora - - -	-	9	0
Canellæ Cortex - -	-	6	6
Cardamomi Semina opt. -	lb.	10	6
Cascarillæ Cortex - -	-	4	0
Castoreum - - -	unc.	5	0
Catechu Extractum - -	lb.	3	6
Cetaceum - - -	-	3	6
Cera alba - - -	-	3	9
—— flava - - -	-	3	6
Cinchonæ cordifoliæ Cortex (yellow)		6	6
—— lancifoliæ Cortex (quilled)		10	6
—— oblongifoliæ Cortex (red)		16	0
Cinnamomi Cortex - -	-	20	0
Coccus (Coccinella) -	unc.	3	6
Colocynthidis Pulpa - -	lb.	36	0
Copaiba - - -	-	6	0
Colchici Radix - -	-	3	6
Croci stigmata - - -	unc.	6	6
Cupri sulphas -	lb.	1	2
Cuprum ammoniatum	-	14	0
Cuspariæ Cortex -	-	4	0
Confectio aromatica	-	9	0

		S.	D.
Confectio Aurantiorum		3	6
—— Opii		6	6
—— Rosæ caninæ		2	0
—— Rosæ gallicæ		2	3
—— Sennæ		2	0
Emplastrum Lyttæ		7	6
—— Hydrargyri		5	6
Extractum Belladonnæ	unc.	2	0
—— Cinchonæ		3	0
—— Cinchonæ resinosum		5	0
—— Colocynthidis		4	0
—— Colocynthidis comp.		2	0
—— Conii		0	9
—— Elaterii		30	0
—— Gentianæ		0	6
—— Glycyrrhizæ	lb.	5	0
—— Hæmatoxyli	unc.	0	9
—— Humuli		0	9
—— Hyoscami	unc.	1	6
—— Jalapæ - 2s. 6d.	Res.	4	0
—— Opii		3	6
—— Papaveris		1	6
—— Rhæi		3	0
—— Sarsaparillæ		1	6
—— Taraxaci		0	9
Ferri subcarbonas	lb.	5	0
— sulphas		2	0
Ferrum ammoniatum		6	0
—— tartarizatum		6	0
Galbani Gummi-resina.		12	0
Gentianæ Radix elect		1	6
Guaiaci resina		7	6
Hydrargyrum purificatum		5	6
—— præcipitatum album		9	0
—— cum creta		7	6
Hydrargyri Oxymurias	unc.	0	9
—— Submurias		0	9
—— Nitrico-Oxydum		0	9
—— Oxydum Cinereum		1	6
—— Oxydum rubrum		6	0
—— Sulphuretum nigrum		0	4
—— —— rubrum		0	9
Hellebori nigri Radix	lb.	3	6
Ipecacuanhæ Radix		18	0
—— Pulvis		20	0
Jalapæ Radix		5	6
—— Pulvis		6	6
Kino		10	6
Liquor Plumbi subacetatis	M. lb.	1	8
— Ammoniæ		5	6
— Potassæ		1	6
Linimentum Camphoræ comp.		6	6
—— saponis comp.		4	6
Lichen	lb.	1	4
Lyttæ		14	0
Magnesia		12	0
Magnesiæ Carbonas		4	0
—— Sulphas, opt.		1	2
Manna optima		7	6
— communis		5	6
Moschus pod, (30s.)	in gr. unc.	40	0
Mastiche	lb.	7	0
Myristicæ Nuclei		20	0
Myrrha elect.		7	6
Olibanum		4	6
Opoponacis gummi resina		30	0
Opium (Turkey)		40	0
Opium (East India)			
Oleum Æthereum	oz.	2	6
— Amygdalarum	lb.	4	8
— Anisi	unc.	3	0
— Anthemidis		6	6
— Cassiæ		9	0
— Caryophilli		6	6
— Cajuputi		8	0
— Carui		1	6
— Juniperi Ang.		5	0
— Lavandulæ		4	6
— Lini	cong.	6	6
— Menthæ piperitæ	unc.	4	0
— Menthæ viridis Ang.		4	6

		S.	D.
Oleum Pimentæ	unc.	6	0
— Ricini optim.	(per bottle)	12	0
— Rosmarini	unc.	1	0
— Succini 2s. 6d. ——	rect.	5	0
— Sulphuratum	P. lb.	1	6
— Terebinthinæ		1	4
— — rectificatum		2	6
Olivæ Oleum	cong.	20	0
— Oleum secundum		12	0
Papaveris Capsulæ	(per 100)	3	6
Plumbi subcarbonas	lb.	0	8
— Superacetas		2	6
— Oxydum semi-vitreum		0	9
Potassa Fusa	unc.	1	4
— cum Calce		0	6
Potassæ Nitras	lb.	1	6
— Acetas		10	0
— Carbonas		4	6
— Supercarbonas		1	8
— Sulphas		1	6
— Sulphuretum		2	6
— Supersulphas		0	9
— Tartras		3	6
— Supertartras		1	10
Pilulæ Hydrargyri	unc.	0	9
Pulvis Antimonialis		0	9
— Contrayervæ comp.		0	6
— Tragacanthæ comp.		0	6
Resina Flava	lb.	0	5
Rhæi Radix (Russia)		42	0
—— (East India) opt.		16	0
Rosæ petala		18	0
Sapo (Spanish)		3	0
Sarsaparillæ Radix		8	0
Scammoneæ Gummi-Resina	unc.	3	6
Scillæ Radix siccat, opt.	lb.	4	6
Senegæ Radix		4	6
Sennæ Folia		6	6
Serpentariæ Radix		8	6
Simaroubæ Cortex		6	0
Sodæ subboras		4	0
— Sulphas		0	8
— Carbonas		6	6
— Subcarbonas		2	0
— — exsiccata		5	0
Soda tartarizata		2	6
Spongia usta		26	0
Spiritus Ammoniæ	M. lb.	5	0
— —— aromaticus		5	6
— —— fœtidus		5	0
— —— succinatus		5	6
— Cinnamomi		3	0
— Lavendulæ		5	0
— Myristicæ		3	6
— Pimentæ		3	6
— Rosmarini		5	0
— Ætheris Aromaticus		7	6
— — Nitrici		5	0
— — Sulphurici		7	0
— — Compositus		7	6
— Vini rectificatus	cong.	27	0
Syrupus Papaveris	lb.	2	0
Sulphur		0	9
— Sublimatum		1	0
— Lotum		1	2
— Præcipitatum		1	4
Tamarindi Pulpa opt.		2	0
Terebinthina Vulgaris		0	10½
—— Canadensis		8	6
—— Chia		14	0
Tinct. Ferri muriatis		5	6
Tragacantha Gummi, elect.		8	0
Valerianæ Radix		1	8
Veratri Radix		2	6
Unguentum Hydrargyri fortius		5	6
—— —— Nitratis		2	8
—— —— Nitrico-oxydi		3	0
Uvæ Ursi Folia		3	6
Zinci Oxydum		7	0
— Sulphas purif.		3	0
Zingiberis Radix opt.		5	0

Prices of New Phials per Gross.——8 oz. 70s —6 oz. 58s.—4 oz. 47s.—3 oz. 45s.—2 oz. and 1½ oz. 36s.—1 oz. 30s.—half oz. 24s.——The London Glassmen allow 10 per Cent, ready money.——The Manufacturers in the Country, where all Phials are made, allow 27½ discount, at three months credit, (carriage free,) to London.

Prices of second-hand Phials cleaned, and sorted.——8 oz. 46s.—6 oz. 44s.—4 oz. 33s. 3oz. 30s.—2 oz. and all below this size, 25s.—Three months credit.

MISCELLANEOUS.

Bethlehem Hospital.—Recent circumstances have much interested the Public, in events connected with the medical appointments to this hospital. Dr. **MONRO**, sen. the Physician, and Mr. **HASLAM**, the Apothecary, being dismissed; and the Governors of the Charity having decided that there should, in future, be two Physicians; several Candidates presented themselves. Of these, Dr. **CLUTTERBUCK** and Dr. **BURROWS** having previously resigned their pretensions, five, viz. Dr. **MONRO**, jun. Dr. **TUTHILL**, Dr. **WILLIAMS**, Dr. **LAMB**, and Dr. **CLEVERLY**, were ballotted for; when the two former were elected. — Mr. **WALLETT** is appointed Apothecary in the room of Mr. **HASLAM**.

NOTICES OF LECTURES.

We rejoice to learn, that Dr. **SMITH**, of Salisbury, has announced his intention, in conjunction with Mr. **COATES**, of instituting Lectures on the Practice of Medicine, Pharmacy, Materia Medica, and Botany, at the Infirmary of that city. It is a laudable example, which, we trust, will be followed by the Medical Officers of other provincial hospitals.

Dr. **CLOUGH**, Physician-Accoucheur to the St. Mary-la-Bonne General Dispensary, &c. 68, Berners-street, commences his Summer Course of Lectures, on the Science and Practice of Midwifery, including the Diseases of Women and Children, on Monday July 7th.

MONTHLY CATALOGUE OF BOOKS.

Essays on Insanity, Hypochondriasis, and other Nervous Affections. By J. Reid, M.D. 8vo.

An Answer to Dr. Kinlake; shewing the danger of his Cooling Treatment of the Gout. By J. Ring, Esq. 8vo.

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THE
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PART I.

ORIGINAL COMMUNICATIONS.

I.

On the Poisonous Effects of the Bark of the Angustura Pseudo-ferruginea, or spurious Angustura Bark. By Professor Emmert, of Tübingen*.

Dr. Rambach, of Hamburg, in the year 1804, noticed the difference of those barks which are sold under the name of *angustura bark*; and pointed out the poisonous effects of a spurious kind, to the consideration of which he was led, by observing a spasmodic affection occasioned by the use of a decoction of angustura. The government of Hamburg issued, in the same year, the first decree against the medical use of such angustura as was not carefully freed from the spurious species†: and soon afterwards several German chemists employed themselves in investigating the difference of these two sorts of bark. On this subject Professor Pfaff also published a paper on the genuine or West-Indian, and the spurious or East-Indian Angustura, with particular regard to its bitter poisonous constituent. His observations have been partly confirmed, and partly enlarged and corrected by Dr. Rambach, so as to make it now easy to recognise the angustura virosa, even in compound powders and mixtures. The following are the principal results of these investigations:

The *spurious* angustura comes from the East Indies, the *genuine* from the West Indies; wherefore the one is also called

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* We are indebted for this valuable paper to our friend Mr. *Brodie.*

† *Hufeland Journal der Pharmacie,* book xix. p. 181. *Berlemphes Jahrbuch fur die Pharmacie,* 1804, p. 273.

East Indian, the other West Indian angustura. The former is not produced, as Humboldt has ascertained, either by the Brucea *ferruginea*, or the Magnolia *glauca*, but is the bark of a tree belonging to a new genus, which Wildenow has established under the name of Bonplandia, and to which he has given the specific appellation, *trifoliata.*

The plant which yields the spurious angustura is as yet unknown: but if we were allowed to hint at its botanical origin, from its physical properties and effects, we should refer it to the genus Strychnos.

The spurious angustura occurs in irregular pieces, sometimes bent outwards, of different sizes, and longer than they are broad; thicker, more brittle, and of a coarser texture, than those of the genuine bark. Their external surface is covered with small, whitish, firmly-adhering warts, and in many pieces, when these are absent, with soft ferrugineous lichens. The internal surface is not marked with distinct fibres, and is generally blackish, but sometimes of a dirty yellow or grey hue. The above-mentioned characters may occur together in the same piece of bark of the ferrugineous species, but sometimes it is covered with mealy and whitish warts: hence it is probable that the three different sorts enumerated by Dr. Rambach, all belong to the same species.

The fracture is even, not shining nor resinous, but mealy, and of a light-brown or yellow colour: it is commonly divided by a light stripe into two layers. The powder is light-brown, or dirty grey.

Pfaff asserts, that it has a smell similar to that of genuine angustura bark, only stronger; but according to Hammel, neither the bark itself, nor the water distilled from it, have any odour.

The taste it imparts is in the highest degree disagreeably bitter, and remains for hours on the palate. The concentrated infusion is not so clear as that of the genuine, but more of a dirty-yellowish brown colour, and it does not become yellow by water being poured over it like the genuine. It assumes, if mixed with muriate, nitrate, or sulphate of iron, a dark-green colour, and precipitates a copious, velvet-like, dark deposit, of a colour bordering upon ash-grey and green. This deposit is completely dissolved again by concentrated nitric acid into a greenish-brown liquid; and my investigations prove that it really contains iron.

Carbonate of potash does not change the colour of this infusion like that of the angustura vera into brown-red, but into green; and likewise precipitates a flaky greenish-yellow deposit, while the colour of the liquid gradually changes to dark-brown.

The decoction of the spurious angustura is brownish-yellow, and precipitates, while cooling, a copious grey-brown deposit; has a disagreeable, and in the highest degree bitter taste, and produces by the same re-agents similar, but more copious deposits, as the infusion. Gelatine produces no precipitate, which demonstrates that it is free from tannin. Fresh-prepared lime-water, tincture of galls, and acetate of lead, produce copious flake-white precipitates. The spirituous tincture is less dark-coloured than that of the genuine angustura; is bitter, and does not become sensibly muddy, or changed. The abovementioned salts of iron produce on it the same effects as on the infusion and the decoction.

Of all the characters of false angustura, the permanent exceedingly bitter taste, the change of colour, and the precipitation produced by the salts of iron in its infusion and decoction, are the most striking, and the least likely to be mistaken. It is clear from what has been said, that it contains a gum resin, and a poisonous bitter, and extractive matter.

The effects of the bitter angustura have been much less studied. The members of the medical faculty of Vienna*, however, instituted some experiments on it; the result of which was, that it is mortal to dogs and rabbits, if these animals swallow a dose of from 8 to 20 grains, while equal and larger quantities of genuine angustura produce no effect whatever upon them. These experiments led to this consequence, that in some provinces of Germany the apothecaries were rigorously commanded to free the parcels of genuine angustura from the bitter poisonous bark; and in Austria the sale of all angustura was prohibited in 1806†.

With the view of investigating more accurately the poisonous effects of this bark, I instituted a set of experiments on animals belonging to the first classes, in which I was greatly assisted by Dr. Meyer, to whom I avail myself of this opportunity of returning my sincere thanks. We obtained the following results:—on the mammalia even of the larger description, as horses; on birds, fishes, and reptiles, it acts as one of the most violent poisons.

The following are the effects which it produces: in the beginning, accelerated respiration; a frequent, convulsive pulse; an anxious and frightened look; diminished controul over the muscles of volition, especially those of the hinder extremities; spasmodic stiffness of the limbs and breast; trembling and confirst fit of tetanus, generally by the next; mostly in few minutes, often from the third to the seventh; sometimes only after several hours, according to the part of the body to which it is applied, or the dose.

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* *Allgemerne Polizeyfama von Hartleben*, 1808. Bd. i. No. 72, p. 757, and after them Professor Pfaff, l. c.

† *Allgem Polizeyf.* l. c.

Any agitation or irritation of the animals to whom this poison has been administered, seems to promote its deleterious effects, and to hasten death.

The convalescences from the effects of the poison of spurious augustura are slow, and promoted by rest. The head and the whole anterior and upper part of the body recover much sooner than the posterior and lower, and particularly the hind extremities of quadrupeds.

The effects of the bitter angustura mentioned are felt in the blood vessels, and all parts of the body that are either furnished with them, or cover them as a thin cuticle; namely, the mucous membranes of the organs of digestion; on the muscles, wounds, and the inner surface of the skin; also the diaphragm and peritoneum: but it has no effect on the body, if applied to organs that have either few or no blood vessels, or which are not easily penetrable, such as the tendons, and the sound epidermis.

However great the distance of the part placed in contact with it from the central points of the nervous system, its fatal effects are not stopped. Cutting the medulla oblongata gives the body, if respiration be artificially maintained, the power to resist its fatal effects for a greater length of time, and allow the symptoms attending its progress to be observed. Artificial respiration, however, does not secure the body from death, whenever a sufficient dose of poison has been applied in any way. We, at least, never succeeded in keeping alive any animal under such circumstances; nor could I save by it the above-mentioned unfortunate boy, although he had swallowed only a small dose of the poison, and the artificial respiration was continued for some minutes.

Destruction of the spinal marrow suddenly suspends the effects of the poison in those parts which receive their nerves from the part destroyed; and if the partial destruction of the hip-marrow be affected before the application of the bitter bark, the posterior extremities do not at all share the influence of the poison, which evidently manifests itself in the rest of the body. If the spinal marrow be only crushed on one side, and the nerves separated from it, the fits of tetanus are confined to the other side of the body.

Complete interruption of the circulation in the parts infected with the poison protects the body from its poisonous influence; under these circumstances also, the absorption of the poison really takes place (as is manifest from the action of the urine on the salt of iron); although in frogs, the sensibility of the nerves, and those parts in which they lose themselves, continues for hours.

The effects of the East-Indian angustura manifest themselves also in those parts of the animals poisoned by it the arteries and veins of which are tied, if the poison be applied soon after the tying of the arteries.

Neither the admixture of oil of turpentine, nor vinegar, nor coffee, destroy the poisonous effects or its obstinate bitterness. Coffee seems to increase, and oil of turpentine to diminish its fatal property: but the green precipitate produced by the salts of iron seems to free it.

If we compare what has hitherto been mentioned with the known effects of other poisons, and the principles of physiology, we are led to the following results as to the manner in which this poison acts, and its chemical nature:

1. The poisonous angustura shews, with respect to the effects that it produces on animal bodies, the greatest analogy to the poisonous species of strychnos, viz. Strychnos *nux vomica*, Strychnos *ignatii*, and Upas *tieuté*.

2. With regard to the part of the animal body it affects, and the circumstances under which it operates, it agrees perfectly with most other poisons, as arsenic, barytes, tartarus emeticus, white hellebore, viper poison, sulphuretted hydrogen, opium, spiritus vini, prussic acid, and the poisons containing it, as the oil of bitter almonds, the prunus *lauro cerasus*, and *padus*, and the above-mentioned poisonous species of strychnos, the upas *antiar*; and the American arrow-poisons, as ticuna, lama, and woorara.

3. It exerts its fatal influence by penetrating the coats of the blood-vessels, mixing immediately with the blood, and then, by means of the circulation, affecting the spinal marrow in a manner destructive and mortal to the whole body. The absorption of the poison has no share in its effects, and all local effects produced by it, proceed only from the affection of the spinal marrow.

4. The action of this poison, like that of the species of strychnos, seems to depend on a combination analogous to prussic acid; for bitter angustura and those species of strychnos (and generally if not all, at least most vegetable poisons) contain, like prussic acid, a great deal of azote; it has also, in common with the latter, and the poisons containing prussic acid, the bitter taste which is very distinct in bitter almonds; and which, in these, does not proceed from extractive matter, as Pfaff contends, but from an etherial oil, as they altogether lose it when the latter is dissipated. The poisonous species of strychnos afford besides, by the salts of iron, a change of colour

and precipitation, like prussic acid; and I find by my latest investigations, that water distilled over bitter almonds, indeed, partly loses its poisonous properties, by precipitating the prussic acid by means of salts of iron, (just as bitter poisons do by the absence of that part which forms with the iron a dark green precipitate,) but not entirely, like the water impregnated with prussic acid, or prussiated alcohol; and that, when digested with iron and alcali, it has the property of always reproducing new prussic acid. The dark greenish precipitate which the bitter poisons produce when combined with the salts of iron, contains indeed no proper prussic acid, and is in other respects different from Prussian blue; but it consists, like the other, of a constituent matter and iron, and seems, like this, to be innoxious to animal bodies; besides, free liquid prussic acid produces, with the salts of iron, precipitates which likewise differ from Prussian blue, and seem to indicate some modifications of prussic acid.

The following fact seems, however, still more strongly to militate in favour of such a chemical composition of the bitter poisonous matter. I have observed, that that remarkable bitter substance which is obtained, after Welter and other chemists, from animal and other bitter substances similar to them, if treated in a warm atmosphere with nitric acid, has an influence on animal life similar to that of bitter angustura; for this *amère* nearly agrees in its chemical composition with prussic acid.

We may remark, also, in this respect that opium, but especially all arrow poisons, have a strongly bitter taste; and that, according to the excellent investigation of Majendie and Delile, all bitter species of strychnos are poisonous; those, on the other hand, that are not bitter, like strychnos *potatorum* and *contac*, are innoxious; and, according to Leschenault, the interior of the root of strychnos *tieuté*, the external bitter bark of which furnishes the strongest upas poison, is tasteless, and free from all pernicious properties. Many kinds of quassia *amara* are also poisonous for birds, lizards, and flies, (upon which animals only I have hitherto tried them); and especially all those are poisons which produce, with the salts of iron, a steel grey precipitate; and lastly, according to late observations, a red gentian root occurring in trade, has shewn narcotic properties*. All these circumstances render it probable, that most vegetable poisons contain a substance similar to prussic acid, and that the simple constituents of it form a series of combinations which have the same relation to prussic acid which the vegetable acids have to acetic acid.

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* *Neues Berlinesches Jahrbuch fur Pharmacie von Dobereiner,* Berlin, 1811. 369.

The fatally poisonous property of putrid black puddings, which has been confirmed by late melancholy instances, depends perhaps on something similar. The poison, however, which is produced in black puddings seems more nearly to approach to the rancid acidity to which also vegetable oils are liable, as the symptoms which attend its operations are similar to those produced by arsenic and copper*.

II.

Observations on Hydrophobia. By R. BELLINGHAM, Surgeon.

THE critical remarks of Mr. Edmondston† on the case of hydrophobia detailed by me, and published in the third volume of the *Repository*, needed not the explanation and apology with which he has prefaced them. The spirit in which they are evidently penned, and the able, candid, and perspicuous manner in which the subject is treated, speak for themselves; and although I should not merely on this account have again obtruded myself on the public attention; yet I take advantage of this opportunity of making the acknowledgment. "Quærere Verum"—the principle upon which every discussion of this kind should rest, appears to be his chosen motto: and although it may be "haud pari passim," yet I flatter myself with being engaged in the same pursuit, and actuated by the same impulse. It may be a poor excuse; but it is an explanation of the case that I have alluded to, to say that the report of it, and the remarks appended to it, were unavoidably drawn up very hastily, without that maturity of reflection which so grave a subject demands and deserves. I never felt, however, and therefore never intended to convey to others, an idea that this solitary case was to blast the hopes of those who had anticipated success from the treatment of hydrophobia by blood-letting. On the contrary, I did not consider this case, in many respects, a fair one for the experiment (for such it must be called); and I felt at that time, to say nothing of subsequent impressions, a determination to carry that "anceps remedium" even further, should it again fall to my lot to witness a case of this deplorable malady. Whether the remedy had, in the case alluded to, *the fullest trial*, can never be decided till we arrive at a more certain knowledge of the limits to which depletion may be carried at this early stage; but I suspect, few practitioners, in complaints of an inflammatory kind, however severe, would choose to exceed the abstraction of nineteen ounces of blood from a delicate child of three years old within twelve hours. It may be well to mention, that the prejudices of the friends were such as to create great obstacles to its employment even to that extent; and that, after all, the current opinion among the vulgar in the neighbourhood was, that we had *purposely* bled the child to death. This prejudice alone prevented its being repeated at our second visit, equi-distant from each bleeding. Whether, if this had been done, the symptoms would have warranted its repetition afterwards, cannot now be decided. According to the rules laid down on the subject of blood-letting in children, in a valuable work by the late Dr. Clarke, this quantity will appear, I think, excessive. Some more sufficient data to guide our practice upon this point are to be desired.

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* If black puddings, which are a compound of animal and vegetable matters, in a putrid state possess poisonous properties, does it not confirm Dr. Burrows' hypothesis, that putrefaction is the real cause of the poisonous qualities found in various fishes?—Vide *Repository*, vol. iii. p. 467-8.

† Vide *Repository*, vol. iv. p. 268.

If acute visceral inflammation be at all analogous to hydrophobia (and viewing the subject practically, I am much inclined to think so), it is my opinion that the *ne plus ultra*, in regard to bleeding, has never been clearly ascertained, and seldom arrived at. I would regard debility, in a case where Nature is obviously so unable to struggle with disease, as a mere bugbear, calculated to intimidate the weak and irresolute, but not the firm and well-informed practitioner.

I shall now proceed to offer some remarks, which, although only collaterally and indirectly blended with this subject, yet will, I trust, excite some interest with your readers. With one, the subject which gives birth to them has excited much interest; and I think that we ought to trace every clue, however slender the thread, and avail ourselves of every species of evidence, that either directly or remotely may shed a ray of light upon this subject, while "shadows, clouds, and darkness rest upon it." Having lately had an opportunity of witnessing the symptoms before, and the morbid appearances after death, in some sheep which were evidently in a rabid state (the proof of which I shall presently adduce), I beg leave to submit to the readers of the *Repository* a brief account of what fell within my observation. Comparative anatomy has on many occasions been studied as a collateral branch of science, with much advantage: by this study, physiology has been enriched: and I see no reason to doubt, that the pathology of the human body may be as much enlightened by an attentive observation of morbid changes in animals, where the nature of the disease has been previously known. In the sheep, moreover, the viscera are, with some few exceptions, so closely analogous, both in structure and in function, to those of the human body, that it is fair to infer that similar causes, mutatis mutandis, should produce similar effects; and the evidence thus collected, however slender in itself, becomes valuable, in proportion to the difficulty of procuring that of a more direct and positive kind.

About the middle of the month of April, an unknown dog, of the spaniel kind, was seen worrying some ewes and lambs belonging to a respectable grazier in this neighbourhood; and after he had made off, seven ewes were discovered to have the nostrils so severely lacerated as daily to require applications to the wounds. A day or two afterwards, the dog was seen and destroyed in the act of worrying some sheep in another farm, about four miles distant: and on a third farm, in a line between these two, three ewes were found much bitten, although, I believe, the animal was not seen on that spot. Little alarm was excited at the time; and the sheep were suffered to remain with the rest, until about the middle of May, before any thing remarkable was observed. At this time, however, on the farm first mentioned, several sheep (eleven or twelve) were attacked with curious and unusual symptoms of disease, which all terminated fatally within the space of from twenty-four to forty-eight hours. Of this number were all the ewes whose wounds had been observed; and in all the others there were observed marks of a bite about the same part, which probably, from being slight and not effusing blood at the time, had been overlooked. The same occurrences precisely took place on each of the other farms, but to a less extent. The symptoms and the fatality were the same. So much for the evidence, as to the cause of the disease, which I think will be deemed conclusive. As to the symptoms, my curiosity being excited by the account I had heard, I rode over, and found four ewes, in different gradations of disease, a short description of which will convey some idea of the character it assumed; for this character was uniform in all.

The first, which was very recently discovered, manifested no other proof of the accession of disease than a constant propensity to ride the other ewes, imitating precisely the action of the ram, and allowing her companions no respite; at the same time shewing no disposition to graze. The second, which was shut in a yard with two others, in more advanced stages, was constantly nibbling the stones, earth, wood, and every thing that came in its way, but without any disposition to feed; frequently running with force against posts and every thing that was near. She immediately ran with great fury at any one who entered the yard, not seemingly with an idea of biting, so much as of butting forcibly with her head, and rubbing the clothes of the person. She immediately attacked any one who approached her two disabled companions, for whom she shewed an extraordinary fondness, although she was frequently tearing out the wool from their backs, and bolting against their heads as they lay upon the ground. The third seemed not deprived of sense; but the use of the hinder extremities was so far impaired, that she could not, in spite of continual efforts, get upon her feet. The fourth seemed almost in articulo mortis: she lay on the ground motionless; except that occasionally, for the space of one or two minutes, she was universally convulsed.

In the first ewe, by way of experiment, I had the jugular vein opened, and suffered the blood to flow till the animal dropped in a state of syncope. A few minutes after this, the pulse in the carotid, was hard, tense, and but 130 in the minute. What the ordinary pulse of a sheep is I know not. I intended to have prosecuted this inquiry further, but the distance from me rendered it quite incompatible with my other avocations. This ewe, I afterwards learnt, became in two days considerably more violent than either of the other, and so much so, that every one was afraid to approach the place of her confinement, and they were at last obliged to shoot her. She endeavoured with the utmost fury to attack every one, and would eagerly catch at stones or pieces of wood, which were occasionally thrown to her, evincing a character so totally opposite to the usual habits of the sheep, as to leave no doubt of the nature of the malady.

On opening this animal after its death, the following morbid appearances were observed:

There was no effusion within the chest, nor any adhesion of the pleura. Two or three hydatid tumours were observed in the right lung, with the cartilaginous cysts described by Dr. Baillie. They were about the size of walnuts.

The *lungs* were unusually dark-coloured and tinged with blood, except one lobe of the left lung; and their general texture much condensed, so as almost to obliterate the air-cells.

The *pericardium* contained between three and four ounces of bloody serum.

The *heart* appeared rather large, and the coronary vessels very turgid. The cavities of the heart, the ventricles more especially, were occupied with coagula (often called polypi), extending for some distance into the aorta and pulmonary artery. The tenacity of these masses exceeded any thing of the kind I have ever witnessed; and on some parts, the red particles having subsided, they consisted entirely of coagulated lymph. In the left ventricle the mass was closely impacted among the fasciculi of muscular fibres, and formed almost a model of its cavity.

The *trachea* exhibited an unnatural vascularity of its lining membrane; the ramifications of which were most distinct towards the bifurcation, which was filled with frothy bloody mucus.

The *stomach* was exceedingly distended with undigested aliment and flatus, but presented no particular morbid change.

The *liver* was of a dark purple colour, and very dense in its structure, differing in that respect considerably from its healthy state. The gall-bladder was full of healthy bile.

The *intestines* exhibited universally strong marks of vascular excitement on their peritoneal surface. This appearance was very evident through the whole canal, but became gradually slighter towards the large intestines. In the small intestines there were several patches interspersed, of a livid colour, and at these parts the cohesion was so slight, that the coats of the intestine were easily frittered to pieces between the finger and thumb. There were no adhesions of the abdominal viscera, nor any effusion of coagulable lymph; but the cavity contained about three pints of serum, deeply tinged with the red particles of blood, and exactly similar to that found in the pericardium.

The *spleen* was natural.

The *kidnies* were very dark coloured, soft, and pliable in texture; in appearance exactly resembling sponge; completely saturated with blood; and the touch seemed at first to convey the same idea; but on increasing the pressure, they were easily squeezed to pieces.

In the *head* there was a considerable extravasation of coagulated blood between the skull and dura mater, over the anterior lobes of the brain. The vessels of the pia mater were rather turgid; the texture and appearance of the brain firm and natural. The lateral ventricles contained a very little transparent fluid. The choroid plexus was very conspicuous.

I shall at present forbear from making any remarks on the preceding narrative; my immediate object being merely to furnish the simple facts.

III.

An Instance in Confirmation of the Origin of Vaccine Virus. By JOHN RING, Member of the Royal College of Surgeons, London.

I BEG leave, through the medium of the *Repository*, to communicate to the public a farther confirmation of the origin of what is commonly called vaccine virus. The disease appeared on the wrist of a coachman in Paris, four years ago; and the fluid taken from the vesicles proved successful in inocculation.

The experiment was made by the Central Committee of Vaccination at Paris; and an account of it was transmitted to me by Dr. Valentin, a physician at Nancy, who has distinguished himself by his publications on a great variety of medical subjects.

This is the first instance in which that virus had been discovered in France. An account of the successful result of the experiments made with it, has been published by the Central Committee.

This event still farther confirms the opinion of Dr. Jenner, and the general opinion, relative to the origin of vaccine virus; of which I long ago published abundant proofs, in my Treatise on Cow-pox; and in the article on the same subject in Rees's Cyclopoedia.

New Street, Hanover Square, June 1816.

IV.

Remarks on the Practice of a Bone-Setter. By JOHN DUNN, Pickering, Yorkshire, Member of the Royal College of Surgeons, London.

WHETHER in an age of superstition or of reason, the human mind most delights in what is novel and marvellous, may be questioned; but the present rage among all ranks of society for empiricism can only be accounted for by this inclination. The imagination and the passions have too generally the controul of the understanding; and when once they produce any appearance of conviction, men will submit to their influence with cheerfulness and perseverance. A few cases of successful treatment performed by a bold and daring adventurer, after the failure of an eminent but cautious practitioner, engages such a popular feeling towards his skill, as frequently to stagger the best principles of the judgment, and set even the evidence of the senses at defiance. From a cause like this a sick man will frequently be biased with the opinion of his charlatanical dogmatist as the testimony of a supernatural being, in defiance of every proof you may be able to present. Even experience itself will not convince him. He had applied too late; or he had not implicitly obeyed the directions given him; or that there was such a thing as incurability, and he laboured under the misfortune: an argument which will always be sufficient to warp his judgment and influence his conduct.

It sometimes happens, and not unfrequently, that although the theory of a practitioner be false, yet his treatment may be successful; and this is a circumstance that strongly calls for the observation of the faculty. It signifies nothing to the latter in the public opinion, if they are acquainted with the nature of a disease, but are ignorant of the method of cure. The opinion of the man who cures will always be taken as the correct one. However we may despise his cruelty, his follies, or his operations, we ought to attend to the means he employs to restore his patient with some care and discrimination. By marking out the true object of his treatment; by candidly confessing the causes of our own failure; by representing the inconsistency of his theory with his practice, and the correspondence of the latter with our notions of the disease, as well as by exposing the danger of a rash unregulated and uniform practice to all cases, we may teach mankind a lesson, and perhaps learn a very good one ourselves. It is at any rate much better than to treat these people altogether with downright contempt and indifference.

I was led to these observations by the astonishing success of an empiric who has lately settled in York, commonly called the Bulmer Doctor. He professes bone-setting; and he really has obtained such an ascendancy in the estimation of the people by his success, as will not be shaken by a few errors, nor even by the most glaring inconsistencies. I should be sorry to detract from his merit; he has the testimony of a tolerably successful practice in its favour. It is but just, however, to say, from the want of a scientific education, and a proper acquaintance with the human body, he has occasionally done considerable mischief. My object is to direct your attention to his plan of treatment in successful cases, as I think it strongly points out the propriety of a remedy as yet but modern in the art of surgery.

Almost all cases of diseases of the joints, scrophula, chronic rheumatism, and white swellings which have not actually burst, he considers to be dislocations, and he gives them a sudden and violent movement, in order to produce a kind of crepitas, which, together with the change of position of the limb, he adduces in corroboration of the truth of his assertions. He then informs the patient the joint must be secured with a bandage, and a tight belt with several straps is applied so as to cover it accurately, and to extend a little distance beyond it. This is kept on for several months, more or less, according to the necessity of the case, the tightness being gradually increased by means of the straps and buckles.

Although every honourable man must condemn the uncandid method of declaring a diseased joint to be luxated, in order to lessen the reputation of the preceding practitioner; although he must also censure the cruelty of attempts at reduction in an inflamed joint; yet, for humanity's sake, I believe it to be the firm opinion of the Bone Setter. His after-treatment appears also amply calculated to compensate for the error. By the leather bandage which is employed, all the advantages of rest and pressure, so eminently successful in cases of this nature, are obtained. His bandage is generally a large covering of strong leather with a number of straps close to each other, running from one side to the opposite, to be secured by their corresponding buckles. It is made to fit very close; and the pressure can be regulated at pleasure in every part of the joint. This is certainly far superior to the method of strapping with adhesive plaister, as it is less troublesome, much firmer, and more easily regulated. It obliges the limb to be at rest, and particularly the tendons round the joint. The patient becomes more submissive to the necessary confinement, and very frequently, if the bones are not carious, he recovers. Perhaps moderate and gentle extension might be also of service when there is not much inflammation, as the limb will then be got to the right position. In cases of acute inflammation, after the lancet, leeches, and the anti-phlogistic plan have been fully employed, it may also be of benefit; for it is in this state the country patients generally go to York, as they would not otherwise be capable of performing such long journies. When matter has formed, the pressure may promote absorption: but I saw two cases where death took place from this treatment, after suppuration. In one of them the skin had not ulcerated, the matter had been taken up, and the joint was much less swollen. I was not called till a few days before they expired, when a confirmed consumption and diarrhœa had supervened. Probably the bones had been carious. In these cases amputation should have been resorted to at an earlier perod, before the constitution had been much affected; but that would have been inconsistent with empirical theory of luxation and reduction.

It is equally a misfortune, that men of tolerably successful practice should not study more the scientific part of their duty, as well as that men of science should not condescend to take hints occasionally from their empirical neighbours, when they observe that, in spite of all opposition to the nonsense of the latter, they turn out in the end to be frequently right in their plan. By these observations I should by no means wish to be understood to have a desire to supersede the well-established method of curing diseases of the joints by external irritants, and discharges. When they are employed early and judiciously, I never knew them fail, when combined with a proper regimen. But there are instances in which blisters and other irritants will not agree. A case strongly in point is related by Mr. Crutwell, of Bath, in Cooper's Dictionary of Practical Surgery. In circumstances of this sort I think we may use the pressure with the greatest advantage in the way I have just described; and when regulated by the steady principles of science, it surely would be followed with a result as favourable as when it was indiscriminately used by the empiric. It is always mortifying to hear of an unskilful pretender tearing the laurels from the regular practitioner. Many instances of such triumph are recorded in our district; and if by careful observation we discover the real cause, we may be able to adopt it with all the advantages which experience, caution, and liberal education must suggest. If we do no more good, we shall be sure of doing less mischief, objects certainly worth the attention of every person who wishes well for the reputation and dignity of his profession.

Two circumstances more I should like to glance at. 1. May not the plan of pressure by means of a leather belt, be applied with success in incurvation of the spine, in conjunction with the excellent machine already in use for supporting the vertebral column? 2. How far may we adopt with safety in contracted joints the plan of sudden distension I have already noticed? I have certainly seen many brought to freedom of motion by a violence that no regular man dare venture upon. I have seen others become more contracted from the same method. It is a question, however, of high importance to our professional character, and deserves serious consideration.

V.

On the Use of Spiritus Salis dulcis in Scrofula. By POWELL CHARLES BLACKETT, Member of the Royal College of Surgeons, London.

OBSOLETE and exploded medicines are not on that account simply to be regarded as useless. Having found great satisfaction in the use of the spiritus salis dulcis* in many indurated and strumous affections, I venture to recommend it again to the notice of the profession. Its effects are thus stated by Quincy:—" Some have held this spirit in great esteem against weakness of the stomach, indigestion, and the like, following from hard-drinking; at present it is not often made use of, or kept in the shops."

I never had an opportunity of observing any benefit to arise from its internal use; but with regard to its external I have seen the greatest advantages. It is sufficient to mention one case only, in order to illustrate my opinions on the subject.

In the beginning of September last, I was requested to see a child, about two years of age, affected with a large tumour on each side of the neck, immediately under the lower jaw, of an inflammatory appearance, and very painful to the touch. I was told by the mother that the tumours first appeared about three weeks before I saw it; but had increased almost daily. She also informed me that her daughter was very costive, and had been so from her birth; that the motions during the time of her infancy were green and sometimes black; but for the last ten months, excepting the three weeks in which she was afflicted with the disease, they were in general natural; but she was continually costive, requiring aperients every third day. For the last fortnight she had been very thirsty and feverish, especially during the night.

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* It is an old Edinburgh preparation, and according to Quincy is thus prepared:—Take of spirit of wine three parts, put them into a large bolthead, and gradually add, spirit of salt one part; digest them together, some say, in a sand heat, and then distil, taking care, towards the end of the operation, that the retort break not from too much heat.

I ordered her a grain of calomel, with five of scammony; and to apply the spiritus salis dulcis in the following manner:—A piece of linen, four or five times folded, to be well moistened with the spirit, applied to the tumours, and repeated three times a day; the powder to be repeated every fourth night. In about a week the motions became natural; and in three, the tumour completely subsided.

The same success has followed a similiar practice with many of my patients, without leaving those frightful scars commonly attendant on this complaint, owing to the improper use of the lancet and poulticing. It is almost unnecessary to recommend strict attention to the bowels, and the assiduous application of the spiritus salis dulcis.

VI.

A brief Sketch of the Medical Topography of Salisbury, with a List of the Medicinal Plants found in its Vicinity. By H. Smith, M.D. F.L.S. Member of the Royal College of Physicians, and one of the Physicians of the Salisbury Infirmary.

Salisbury, the capital of Wiltshire, is a neat, clean, paved city, about eighty-three miles west of London, in W. long. 1°, 55′; lat. 51°, 3′; and about thirty miles from the nearest sea-coast. Old Sarum, the original county-town, was situated upon a high hill; and the inhabitants suffering from want of water, determined to obviate that inconvenience in future, and absolutely built the new city in a meadow. Salisbury is supplied with channels, conveying water almost through every street, and is surrounded with well-drained meadows and rivers. Although it is apparently sheltered by chalky hills, yet the town is very cold; probably owing to the continual evaporation, and the wind, which although not always from the east, yet is generally in some quarter of the east. Agues are by no means so prevalent as the situation might lead one to expect; and they cannot be considered as peculiar to the place or neighbourhood.

The diseases most prevalent in Salisbury, are typhus mitior, rheumatism, and affections of the chest.

Salisbury had at one period a flourishing woollen trade, which produced the celebrated Salisbury flannels; but it is now gone by; consequently there are a great number of people thrown out of employment; and the hospital is crowded with dyspeptics.

In the year 1765, a county hospital was established for the relief of the indigent poor, and is supported by voluntary contributions. It affords considerable practical information to the medical officers of the establishment, who consist of two physicians, two surgeons, and a house-apothecary. It is a practice of the hospital to abstract blood, by cupping and scarifying, from the pained part, as an auxiliary, in pulmonary diseases; and, indeed, in all cases of local pain, this plan is adopted, and the patients are not at all averse from the second or third application. In Porrigo scutulata, which is not an uncommon disease, and frequently proves obstinate, the frequent washing the shaved head with soap and water, and the application of the unguentum hydrargyri præcipitati albi, with a decoction of dulcamara pro lotióne, and an alterative course of medicine, are the means which have been found most effectual. Measles have been very fatal among the poor during the spring and early part of this summer, owing to the improper management adopted by parents, in giving cordials, &c. to *drive them out.* Vaccination is not so generally prevalent as it deserves to be, especially among the poor; a few cases of failure having occurred.

Salisbury can boast of as many old people as most places, and of as many excellent charities for their relief and comfort. From every road approaching the city, its beautiful cathedral, with its high spire, rising from the valley, forms a picturesque object, and adds considerable interest to the scenery. The adjacent soil is chiefly chalky loam, intermixed with flints, and varied with red and white gravel, clay, and marle. In the chalk and gravel pits many fossil remains are found, such as spongites, shells, and other marine productions, a good collection of which is in the possession of my ingenious friend Mr. Shorto.

The population of Salisbury, at the last census, about seven years since, amounted to 7,668 individuals, including that part called the Close. It is possibly not now so great, on account of the emigrations from loss of trade.

CLARENDON WOODS,

" Quà pinus ingens albaque populus umbram hospitalem consociare amaret ramis," the scene of many a botanical excursion*, are situated about two miles from Salisbury, upon a chalky hill, and afford several kinds of soil; viz. calcareous loam, clay, gravel, sand, red and black earth. Bogs and springs, brick kilns and potteries, are in the neighbourhood; and, as may well be imagined, a great variety of plants are here to be found; some of which, met with within these three months, are enumerated in the following list:

Plants found in the neighbourhood of Salisbury.

MONANDRIA.
Monogynia.
Hippuris *vulgaris.*

DIANDRIA.
Monogynia.
Veronica *arvensis.*
——— *serpyllifolia.*
——— *hederæfolia.*
——— *chamædrys.*
——— *Beccabunga.*
Ligustrum *vulgare.*
Salvia *pratensis.*

TRIANDRIA.
Monogynia.
Valeriana *locusta.*
——— *officinalis*[1].
Iris *pseudacorus*[2].
Digynia.
Poa *annua.*

TETRANDRIA.
Monogynia.
Scabiosa *arvensis.*
Plantago *lanceolata.*
Galium *aparine*[3].

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* The study of Botany is attended with so much pleasure as well as utility, that I hope and expect it will be more attended to, particularly if facilities should be afforded for acquiring it to medical pupils and students in the country. I have no doubt that an English Materia Medica, I mean of plants growing or cultivated in England, may be furnished, containing the most efficacious remedies, and quite sufficient for the cure of the diseases of this country, as far as the vegetable tribe is concerned. To country hospitals it is very important at this time to lessen their expenditure; when, from the general stagnation of trade and pressure of the times, subscriptions are by no means abundant. The out-patients of most hospitals, as well as the convalescents within, may be instructed and induced to collect herbs, as a small return for the assistance they receive.

[1] Abundant in the woods and meadows about Salisbury: so much so, that great quantities of the roots are collected, dried, and sent to the London market. My experience will not allow me to say much in favour of the virtues attributed to this root. It is a favourite with some practitioners; but it is a medicine not only disagreeable to take, but also leaves a disagreeable smell wherever it is used.

[2] The roasted seeds of this iris have been recommended as a good substitute for coffee.

[3] I have very lately prescribed a tea-cup-full of the juice of this herb to be taken every morning, and a poultice of the same bruised

Galium *cruciatum.*
Cornus *sanguinea.*

PENTANDRIA.

Monogynia.

Lithospermum *arvense*
——— *officinale*
Primula *veris*[4].
——— *vulgaris.*
Myosotis *scorpoides.*
Symphitum *officinale.*
Menyanthes *trifoliata*[5].
Anchusa *sempervirens.*
Borago *officinalis.*
Campanula *hybrida.*
Hyosciamus *niger*[6].
Cynoglossum *officinale*[7].
Echium *vulgare.*
Solanum *dulcamara*[8].

Digynia.

Sanicula *Europea.*
Chærophyllum *sylvestre.*
Scandix *pecten.*
Heracleum *spondylium.*
Chenopodium *bonus henricus*[9].

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with a little common salt, to be applied every night, for a young lady with a scirrhous tumour in the right breast, which she has no means of accounting for. It has existed about twelve months, but she is very unwilling to submit to an operation, which indeed I do not at present urge; because she is now about eighteen, and has not yet regularly menstruated. In conjunction with the above, I advise her to take the Ferri sub-carbonas, Magnesia et P. Jalapæ, on account of continued costiveness, and Extr. Conii cum pil. Hydrarg. h. s. She has this day informed me that the poultice is very cooling and pleasant to the breast, and that it is quite easy. You shall hear the result of this case.

[4] An infusion of the flowers of this plant is no mean auxiliary in irritable coughs, &c. as an anodyne.

[5] The Menyanthes trifoliata appears to me to be a very efficacious eccoprotic bitter, and may supersede the more expensive cinchona in rheumatisms, after the warm bath and evacuations. It is also useful in all cases where such a bitter is required, particularly in dyspepsia, accompanied with constipation and slight affection of the liver. The following infusion is that which I commonly use at the hospital.

℞. Menyanthis Foliorum Siccatorum ℥ss.
Coriandri Seminum Contusorum ʒij.
Aquæ ferventis Octarium: Macera per horam in vase leviter clauso et cola. Sumat æger cochlearia tria ampla bis terve die.

[6] Road sides, and among rubbish. The extract is an useful anodyne, and in costive habits better than opium.

[7] A decoction of the roots inwardly, and a cataplasm of them outwardly, have been recommended in strumous cases.

[8] Common in hedges. Great virtues have been attributed to a decoction of the twigs, particularly in chronic rheumatism, jaundice, and diseases of the skin. Boerhaave considered it a medicine far superior to the sarsaparilla. I have seen it very useful in psoriasis, herpes, &c. A decoction used as a lotion has allayed the troublesome itching attending these complaints.

[9] It is cultivated as spinach in some places.

Trigynia.

Sambucus *nigra*[10]
Viburnum *lantana*[11]

HEXANDRIA.

Monogynia.

Juncus *pilosus*
Hyacinthus *non scriptus.*

Trigynia.

Rumex *acetosella.*

OCTANDRIA.

Trigynia.

Polygonum *bistorta*[12].

Tetragynia.

Adoxa *moschatellina.*

DECANDRIA.

Digynia.

Saxifraga *granulata.*
——— *tridactylites*

Trigynia.

Cucubalus *behen.*

Pentagynia.

Agrostemma *Githago.*
Lychnis *dioica.*
——— *flos cuculi.*
Sedum *acre.*
Stellaria *holstea.*
——— *media.*
——— *graminea.*

DODECANDRIA.

Trigynia.

Euphorbia *sylvatica.*

ICASANDRIA.

Monogynia.

Prunus *spinosa.*

Digynia.

Cratægus *oxycantha.*

Polygynia.

Potentilla *anserina*[13].
Rubus *fructicosus*[14].
Geum *urbanum*[15].
——— *Rivale.*
Rosa *canina*[16].
Tormentilla *erecta*[17].
Potentilla *reptans.*

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[10] The whole plant has a narcotic smell, and it may possibly be useful to place the green boughs around the pillow of the sick, for a short time in some cases of watchfulness. The inner green bark is an acrid cathartic, and in smaller doses diuretic. Both Sydenham and Boerhaave, names high in medicine, and men of considerable observation, recommended it as an effectual hydragogue. Sydenham in particular, in his Tractatus de Hydrope, gives us the following recipe:—" Nempe manipuli iij. corticis interioris sambuci à ligno derasi in ℔iij. aquæ et lactis, simul mistorum ad ℔j. incoquantur. Decocti hujus altera medietas mane altera sero quotidie assumatur donec æger convalescat. Hoc remedium et vomitionem ciet et catharsin ;" and concludes, " mirè ad hunc morbum debellandum confert."

[11] The bark of the root is used to make bird-lime. (Hedge, near the water at Milford).

[12] The root of the bistort is esteemed one of the most powerful of the vegetable astringents, and will answer the purpose as well as the more expensive kinds.

[13] The leaves are mildly astringent.

[14] Silk-worms will feed on the leaves in defect of the mulberry. —*Stokes.*

[15] The taste is mildly austere and aromatic.

[16] The leaves are a good substitute for tea.

[17] The roots are very astringent, and contain a good deal of tannin. A decoction of them, with chalk and gum arabic and a little cinnamon, I am in the habit of using in diarrhœa, leucorrhœa, &c. with success.

POLYANDRIA.
Monogynia.
Chelidonium *majus.*
Cistus *helianthemum.*
Papaver *rhœas*[18].
Pentagynia.
Aquilegia *vulgaris.*
Polygynia.
Ranunculus *bulbosus.*
———— *acris.*
———— *hirsutus.*
———— *aquatilis.*
———— *arvensis*[19].

DIDYNAMIA.
Gymnospermia.
Glecoma *hederacea.*
Ajuga *reptans.*
Lamium *purpureum.*
——— *amplexicaule.*
——— *album.*
Thymus *serpyllum*[20].
Stachys *sylvatica.*
Angiospermia.
Melampyrum *pratense.*
———— *sylvaticum.*
Rhinanthus *crista galli.*
Scrophularia *aquatica.*
Pedicularis *sylvestre.*

TETRADYNAMIA.
Siliculosa.
Thlaspi *bursa pastoris.*
Siliquosa.
Erysimum *alliara.*
———— *barbaria.*
———— *officinale*[21].
Brassica *napus.*
——— *rapa.*
Sinapis *arvensis.*
Cardamine *pratensis.*

MONADELPHIA.
Decandria.
Geranium *robertianum.*
———— *molle.*
———— *pratense.*

DIADELPHIA.
Hexandria.
Fumaria *officinalis*[22].
Octandria.
Polygala *vulgaris*[23].
Decandria.
Lotus *corniculatus.*
Spartium *scoparium*[24].
Lathyrus *pratensis.*
——— *aphaca.*
——— *nessolia.*
Vicia *sativa.*
Hedysarum *onobrychis*[25].

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[18] Abundant in corn-fields. The capsules of this species, like those of somniferum, contain a milky juice of a narcotic quality, and an extract prepared from them has been employed as a sedative. I have employed the fine red petals in hospital practice, in the same way as the more expensive infusion of the red rose; and as it is desirable to please the eye in the appearance of medicines, I have found this answer every purpose.

[19] Poisonous to sheep.

[20] An infusion of the leaves is said to remove the head-ache occasioned by the debauch of the preceding evening.

[21] It is used as a spring salad, and is called by the gardeners French grass.

[22] It would be worth trying a decoction of this very common plant as an alterative, diuretic, and laxative, in several cutaneous diseases. Cullen gives it a good character.

[23] Has been recommended instead of the polygala senega.

[24] I believe this plant to be a good diuretic. I have lately ordered the seeds to be roasted, and made into a decoction like coffee, and drunk in the same way. It proved considerably diuretic.

[25] There are fine luxuriant crops about Salisbury, on the chalky soils. It affords excellent food for cattle.

SYNGENESIA.
P. æqualis.
Hieraicum *pilosella.*
——— *taraxaci*[26].
Tragopogon *pratense.*
——— *porrifolium.*
Crysanthemum *leucanthemum.*
Senecio *jacobea*[27].
——— *vulgaris.*
——— *aquaticus.*
Carduus *lanceolatus*[28].
——— *acanthoides.*
——— *helenoides.*
——— *pratensis.*
——— *marianus.*
Matricaria *chamæmilla.*
Leontodon *taraxacum*[29].
P. frustanea.
Centaurea *cyanus*[30].

GYNANDRIA.
Diandria.
Orchis *mascula*[31].
——— *maculata.*
——— *latifolia.*
Orchis *bifolia.*
——— *ustulata.*
——— *conopsea.*
——— *apifera.*
——— *pyramidalis.*
Serapias *grandiflora*[32].
Polyandria.
Arum *maculatum.*

MONŒCIA.
Tetrandria.
Betula *alba.*
Polyandria.
Poterium *sanguisorba.*
Bryonia *dioica*[33].

DIŒCIA.
Monandria.
Salix *fusca.*
Enneandria.
Mercurialis *annua.*

POLYGAMIA.
Monoicea.
Parietaria *officinalis*[34].
Acer *campestris.*

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[26] This specimen agrees exactly with that described by *Withering*. I found it on a high bank under a hedge.

[27] Meadows at Harnham. If woollen cloth is boiled in alum-water, and then in a decoction of the flowers, it takes a beautiful deep yellow.

[28] The seeds of this plant vegetate on heaps of clay or rubbish. Under its shade other vegetables grow up, and the whole appears fertile.

[29] This plant has been recommended by various authors as efficacious in icterus, ascites, tubercles of the lungs and liver, and some cutaneous diseases, either in a decoction of the fresh roots, or an infusion of the leaves. I am now giving it to a patient for complicated visceral disease with chronic peritonitis of nearly two years standing. He is certainly better, and less in pain since its use.

[30] The expressed juice of the neutral petals with a little alum, is a good blue ink, which I have tried this season.

[31] The roots of the orchis tribe, properly prepared, I should recommend as a good substitute for the expensive sarsaparilla; nay, I believe they would be more efficacious. I mean to give the salep an extensive trial, and to procure a quantity of these roots at the proper season, viz. when the seed is formed, and the stalk is ready to fall. It will also be found an excellent restorative diet drink.

[32] Plantation on a hill at Amerbury, and at Standlynch.

[33] Is a powerful and irritating cathartic, and the roots may be used in the same cases as the elaterium.

[34] On old walls and rubbish. The expressed juice is said to be diuretic, and the plant to contain a good deal of nitre.

VII.

Remarks on Dr. Wilson Philip's Paper, intitled "*Some Observations on Inflammation.*" By CALEB HILLIER PARRY, M.D. F.R.S. &c. Bath.

IF the learned and ingenious Dr. Wilson Philip had read my definition of what I understand by the term DISEASE, he would probably have omitted the first part of his Observations, p. 52, in the last Number of the *Repository.* The following are my words, "By the term disease is understood such a deviation from the usual state of any part, parts, or the whole of the system, as, when of a certain extent or duration, is productive of more or less of present inconvenience*."

In the course of the same work, I have adduced several examples of increased momentum of blood in various parts, without the production of inflammation, or even any other present inconvenience. This state, therefore, is not necessarily a state of disease. When, however, conformably to the definition, it has taken place to a certain extent (of force) or duration, then it becomes a cause of disease; and as every subsequent phænomenon, so far as I am able to discover, forms a part of the disease itself, I should conceive that this preceding phænomenon alone has a right to be called the proximate cause. Were this definition generally admitted, pathological discussions would have reference to the important question of the quality and order of phænomena, and would no longer be mere disputes about words.

In paragraphs 226 and 227, I have not only admitted, but contended for, an inherent power of construction, in the capillaries, for the purpose of carrying on stagnant blood. This state of sanguineous stagnation is certainly a morbid one; and the renewed action of the capillaries is a salutary process. In what way, however, the exertion of such a process, on such an occasion, proves the necessity, or the fact of a similar action for the purpose of carrying on the circulation of the blood into the veins during its ordinary course, I am wholly at a loss to discover. So far as my observation and reading have reached, it appears to me that this action, during universal health, like that of the larger arteries, so well refuted by Bichât† and others, is a merely gratuitous hypothesis, founded on the false analogy of the motion of the heart.

Into the validity of this and other criticisms on both the works, which Dr. Philip has done me the honour to notice, I propose hereafter fully to inquire.

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* *Elements of Pathology,* vol. 1. *Preface,* p. 6.

† *Bichât Anatomie Generale,* tom. ii. *p.* 320 *et seq.*

VIII.

A Case of Cynanche Laryngea. By W. ROBARTS, Burnham, Bucks, Member of the Royal College of Surgeons, London.

THE publication of several cases of Cynanche Laryngea, in the *Repository*, leads me to think that the following communication will not be uninteresting.

The subject of it, Mr. J.H., is a respectable farmer, a stout healthy man, aged 29 years, of a florid complexion, and strong, rigid, muscular fibre. On the 5th of March, having previously complained of cold and nausea, he sat down to dinner with a party; but on the first attempt to eat, he found himself unable to swallow, and felt, at the same time, an inclination to vomit. I was now sent for; and perceiving his tongue was much furred, and tinged with yellow, and the pulse being only 80, and unattended with general heat, I supposed there was simply a disordered or painful state of the stomach and bowels; and accordingly directed him to take an emetic, which enabled him to throw up a quantity of green and viscid fluid. He then took four grains of calomel, and soon afterwards a cathartic draught. He found much difficulty in taking the draught, and part of it was returned; but enough remained to produce several evacuations. During the night the difficulty of swallowing was increased, and attended with an anxiety in respiration, which obliged him to make repeated efforts to cough up something. This difficulty of breathing continued to increase so rapidly, that, before morning, his attendants thought he would have been choked, as he appeared, they said, at times, quite black in the face. I was therefore again summoned about 8 o'clock, and found him half-reclining in bed, continually coughing, until he succeeded in expectorating a viscid, fœtid mucus, which gave him a few minutes intermission. His pulse was now 120, and his skin rather hot; there was some uneasiness on pressing the sides of the larynx and trachea; a slight redness of the fauces was also perceptible, and a sense of tightness, without pain, across the thorax. He was, however, so hoarse, as to find it distressing to speak; and he inspired and respired with much exertion, and with a guttural sound, which cannot be more exactly described than by comparing it to that which, as Mr. Bedingfield remarks, may be produced by the effort to sound the letters, ur-a-rl.

Seeing it was necessary to use prompt and decisive measures, sixteen ounces of blood were immediately abstracted, a large blister applied over the course of the larynx and trachea, and he was ordered a draught with two grains of ipecacuanha and fʒiij. liquoris ammoniæ acetatis every four hours. With great efforts he swallowed nearly the whole of the first draught;

but when I visited him in the evening, I found him quite unable to perform deglutition, for no fluid would pass, although he repeatedly tried; from which it was concluded that the pharynx also was much affected. The danger of his case was now so obvious, that fearing threatening suffocation, I had determined and was prepared to open the trachea, rather than suffer the latter consequence to take place; a measure which luckily was not necessary, but which would have been fully justified had it become so.

The crassamentum of the blood, taken in the morning, exhibited a surface of coagulated lymph nearly half an inch thick, of great tenacity, and somewhat inverted at the edges: and as his bad symptoms were not abated, 18 ounces more of blood were taken, which almost produced syncope: each time the blood flowed very hot, florid, and with considerable impetus. After this, the expectoration became rather freer. The last portion of blood was similar to the first, but the lymph not quite so thick, and less tenacious. Four grains of calomel, and the same quantity of antimonial powder in a little jelly, were now given, which he gradually sucked down; and, during the night, he took in the same manner 4 grains of the latter powder every fourth hour.

March 7, Eleven A.M.—The expectoration was easier, and appeared like pieces of coagulable lymph, very fœtid; and sometimes, upon attempting to swallow any thing, a quantity of green viscid matter would be thrown up, apparently from the pharynx. His bowels not having been relieved, he took 3 grains of calomel and 5 of scammony. As his skin was still hot and dry, a warm bath was directed, in which he remained about fifteen minutes: he was then wrapped in blankets, and used Mudge's inhaler, containing a small quantity of camphor and myrrh in boiling water, which brought on perspiration, and much relieved him. This evening he could swallow liquids better, and took a draught containing magnesiæ sulphatis ʒij. which had the desired effect.

March 8.—He was much better. The cough nearly gone; the expectoration freer and plentiful; no feverish heat; the hoarseness diminished, and deglutition comparatively easy.

From this time he has continued to get better. He took a draught of infusum rosæ with ℈j. magnesiæ sulphatis three or four times a day, and occasionally 4 grains pilulæ hydrargyri.

March 12.—The hoarseness had increased, with a degree of fever; his draught was therefore changed for the saline, with liquor antimonii tartaris, 4ta quaquâ horâ; and, on the 13th, leeches were applied just below the situation of the larynx, from which much good resulted. Doses of myrrh mixture, with diluted sulphuric acid, were afterwards continued for a time, with other little attentions; and it is with much satisfaction that I am now able to say, that complete recovery has succeeded.

What would have been the termination of this case, if active measures had not been early adopted, may be readily conjectured. It appears to have been one of those instances, which imperiously call for the exercise of that qualification so zealously and laudably enforced by Mr. Bedingfield:—and, surely, no one can meritoriously or successfully fulfil the duties required of a medical man, who does not on all occasions act with vigilance and promptitude.

AUTHENTICATED CASES, OBSERVATIONS, AND DISSECTIONS.

XXIII.—*Case of Petechial Fever.*

THIS case of petechial fever occurred in a man servant, who had lately come from the country, and had never to his knowledge been ill before. He was about thirty years of age, of a pale complexion, and full habit of body. For some days before the Reporter saw him, he experienced considerable lassitude and pain in his joints, which he ascribed to more than usual fatigue in the performance of his duties; and on the day on which he was visited he felt his hands so stiff that he could not close them, or grasp any thing. He was covered with petechiæ, which on the legs were mixed with purple blotches. His pulse was small and oppressed; his gums spongy and bleeding; the urine dark coloured, as if mixed with broken down blood; and the stools, of which he had had one only for the last two days, were lumpy and mixed with blood. His appetite was completely gone; yet he was not thirsty, and the tongue was clean. Fourteen ounces of blood were immediately abstracted from the arm; a brisk cathartic ordered to be taken in two hours afterwards; and directions given that his food should be sago, and his drink lemonade.

Next morning he expressed himself much relieved. The blood was covered with a pale, *pinkish*, somewhat sizy coat, nearly semitransparent, and scarcely at all tenacious; and there was a considerably less than ordinary proportion of serum. He had had six stools, the last of which contained no blood, but his urine continued nearly the same. The petechiæ were now confined to the legs, and much paler; his gums were no better; and he was still extremely weak, although he could now use his hands. The pulse was much freer, and 70. He was ordered the following mixture.

℞ Infusi Cinchonæ f℥vss,
Tinct. Cinchonæ C. f℥iij,
Acidi Muriatici ♏ xxxvi,
Syr. Papaveris f℥iss.—M. ut fiat mistura, cujus sumatur 3tia pars 6ta q.q. hora.

His bowels were kept open with rhubarb; and he was desired to wash his mouth with a strong solution of catechu, with the addition of some tincture of myrrh; to take two glasses of port wine in the day, and to live altogether on a vegetable diet. Under this plan of treatment his strength gradually returned; and he is now, fifteen days from the attack, in perfect health.

The Reporter did not expect to find the blood sizy; but he bled the patient merely with a view to unload the sanguiferous system, which he conceived was so oppressed and overcharged with blood, as to weaken the general vis-a-tergo and cohesion of the coats of the vessels; and hence, by the languidness of the pulse, and the rupture of the extreme sub-cutaneous vessels, producing the petechiæ. By relieving the blood vessels, their re-action was restored, the absorbents also renewed their operations with more energy, rapidly taking up the effused blood; whilst all the other animal functions recovered as it were their natural elasticity.—T.

XXIV.—*Case of Hydrophobia.*

A FATAL case of hydrophobia occurred at Kensington, on the 4th ult. in a boy about nine years of age. He had been bitten in the cheek about six weeks before by a strange dog, but the wound healed, and the circumstance was unheeded. In the three days preceding the 4th, he had complained of great pain and oppression about the epigastric region, but he ate and drank as usual. Some common opening medicines were given to him without effect. On the morning of the 4th the convulsive symptoms of hydrophobia appeared, and were so strongly marked when the Reporter saw him, in the middle of the day, as to excite an immediate inquiry into the origin of the mischief. He was informed that the boy had not been able to swallow for some hours; and he was at that time in a very exhausted state, although the convulsive efforts were strong. A few ounces of blood were drawn, and other remedial means adopted; but the patient died within two hours after he was first visited. No morbid appearances were discovered on dissection.—T.

⁂ In the last Half Yearly Retrospect of Medical Science, p. 27, in the comparative statements of the Analysis of the Tunbridge Wells Mineral Water, the quantity of gazeous contents in a wine gallon should have been as follows:

A wine gallon, analysed in 1792, yielded	Cubic inches.	A wine gallon, analysed in 1816, yielded	Cubic inches.
Carbonic acid gas	10·6	Carbonic acid	8·05
Azote	4·	Azote	2·75
Atmospherical air	1·4	Atmospherical air	2·50
	16·		13·30

PART II.

ANALYTICAL REVIEW.

I.

Traité des Poisons tirés des Règnes Minéral, Végétal, et Animal, ou Toxicologie Générale, considérée sous les Rapports de la Physiologie, de la Pathologie, et de la Médicine Légale. Par M. P. Orfila, M.D. &c. &c. Tome Second, 8vo. pp. 682.

[Continued from Vol. V. page 411.]

The sixth chapter contains the class of septic poisons, *Poisons Septiques or Putrifians*, the sixth of M. Orfila's arrangement. This term he applies to those poisons which produce general debility, a breaking down of the animal fluids, syncope, and which, in general, do not affect the intellectual faculties. The first of these is sulphuretted hydrogen gas, *gaz acide hydro-sulphurique**.

This gas is readily distinguished by its odour, which is analogous to that of rotten eggs. It reddens infusion of litmus, is inflammable, burns with a bluish flame, and deposits sulphur in burning: when mixed with *chlorine* it is decomposed, yields its hydrogen, and forms hydro-chloric acid, and the sulphur is left behind. It is soluble in water, and its solution precipitates arsenious acid bright yellow; and the salts of copper, lead and bismuth, black, in the form of sulphurets. The deleterious effects of this gas on the animal economy have been long known, and are farther proved by the experiments of our author on dogs, rabbits, and other animals; and some cases which occurred to M. Dupuytren.

The more prominent symptoms produced by this gas, are, convulsions, and violent contractions of the abdominal muscles; an unequal intermittent pulse; accelerated and sometimes suspended respiration; loss of the lustre of the eyes, and a sensation of cold in the ears. From the facts known regarding it, M. Orfila forms the following conclusions:

"1. Hydro-sulphuric acid gas and its solution in water are powerful poisons. The gas is most active when respired, less so when injected upon the pleura or into the jugular vein, and still less when thrown into the cellular tissue, or introduced into the stomach or the intestines. It has very little effect when applied to the surface of the skin; but it acts more strongly the smaller the animal is; so that a man may use sulphuretted baths, in which the gas is disengaged, provided he does not remain too long in them, and the gas is not respired. 2. It is completely absorbed without being decomposed; hence, carried into the course of the circulation, it produces general debility, an alteration in the texture of the organs, particularly in the nervous system, and probably in the composition of the blood. 3. It may nevertheless be injected into the veins without producing any deleterious symptom. 4. Its mortal effect does not depend on its producing distension of the heart, as it is very soluble in the blood. 5. It apparently acts in the same manner upon men as upon the lower animals."

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* We cannot avoid noticing the impropriety of this term, when applied to sulphuretted hydrogen gas. It properly signifies sulphuric acid, strictly speaking, in combination with water; and has been, in that sense, used for the sulphuric acid of Commerce.—Editors.

The treatment of asphyxia from this gas is the same at first as recommended for that occasioned by the vapours of charcoal: some spoonfuls of olive oil should then be given, and vomiting excited. Our author recommends the employment of chlorine for destroying this gas, when it abounds in any confined place.

Several experiments are detailed, which were made with a view of proving that putrid substances exert a poisonous effect on the animal economy. M. Orfila, however, is of opinion, that the facts on this subject are not sufficiently numerous to determine whether the deleterious properties of these substances depend on the local irritation they excite, or on their being carried into the circulation. He intends this as the subject of a particular work, in which he proposes to examine, "1. What chemical alteration animal fluids undergo after death. 2. Their action upon the animal economy, or the kind of diseases, both local and general, which putrid substances produce. 3. The decomposition which the animal fluids suffer in certain diseases during the life of the patient, and the effects they produce by their contact with the living organs."

The next object of our author's inquiries is poisonous animals, "*des animaux venimeux;*" an appellation is given to those animals

> "1. Who possess a receptacle of poison, and whose bite is productive of serious, sometimes fatal effects; 2. who do not possess any such receptacle, but whose flesh when eaten produces deleterious effects; 3. whose fluids have been so perverted by previous disease, that their contact occasions hurtful effects."

To these he adds also those animals, the sting of which, even when they are in health, excites pain and other unpleasant consequences;

"*Des animaux venimeux dont la morsure ou la piqûre est accompagnée d'accidens plus ou moins graves.*"

After describing the *viper*, and giving the principal particulars of its natural history, M. Orfila examines the physical and chemical properties of its venom. This is neither acid nor alkaline, acrid nor caustic, and when applied to the tongue, produces no other sensation than that of fresh animal fat: its odour is less nauseous than that of the fat of the reptile. It does not readily mix with water, but when mingled with it occasions a milkiness. "It does not burn when exposed to the flame of a candle, or placed upon hot coals." It appears to be of a gummy nature.

Our author does not appear to have devised any experiments on the poison of the viper, but quotes those of Fontana, who made nearly six thousand on this subject. That author concluded, that although the venom of the viper does not prove fatal to many animals, yet all the warm blooded animals, snakes, the viper itself, and small lizards, are killed by it. We have no data for doubting Fontana's assertions regarding the effects of viper poison on snakes; but we can affirm, that no enmity subsists between these reptiles and vipers, as there is at this time a common green snake and a viper confined together in the same vessel, in the shop of a herbalist of Covent Garden, who have been living in perfect harmony for more that six weeks.

The virulence of the poison of the viper, according to Fontana, is regulated by the temperature of the weather and strength of the individual; and the quantity of it which is necessary for destroying animal life depends on the size of the animals bitten. Thus he calculated that,. although 3 grains would kill a man, yet, it would require 12 grains to destroy an ox. This poison injected into the jugular vein of a rabbit produced convulsions, and inflammation of the intestines, the stomach, mesentery, and abdominal muscles; and coagulated the blood in the ventricles of the heart. Applied to a wound, it produced acute extensive pain, tumefaction, and inflammation; syncope; a small frequent pulse; copious cold sweats; disturbance of the intellectual faculties; heavings of the stomach; bilious convulsive vomiting; yellowness of the skin; and sometimes pain at the umbilicus. Gangrene of the part occurs when the case proves fatal. From experiments on animals, it appears that this poison does not produce death when simply applied to the sound skin, or the muscular fibre; but animals bitten by a viper in the chest, belly, intestines, or liver, perish in a space of time more or less short: but those in whom the poison was applied to the "ears, the pericranium, the periosteum, the dura mater, the marrow of the bones, the transparent cornea, the tongue, the lips, the palate, and the stomach," in many instances suffered no great inconvenience. Applied to the nerves, it is, says Fontana, "aussi innocent que l'eau pure ou la simple gomme arabique." Its deleterious effect on the animal economy appears, therefore, to depend chiefly on irritability, by exciting a putrid tendency in the fluids. The venom retains it properties even when the head has been some time separated from the body of the animal, but loses them when it is dried. Some interesting observations of M. Paulet are added, which are rather at variance with the opinions of Fontana regarding the effects of the bite of the viper on man.

M. Orfila, quotes largely from the excellent work of Russel, as to the poisonous nature of the bite of the cobra del capello, of the viper elegans of Daudin, the coluber grammeneus of Shaw, and the boa of Russel, on the animal system. But as Russel's work is well known, we merely extract the conclusions drawn up by our author:

"1. The above-mentioned reptiles are all venomous, but not in the same degree. 2. The symptoms which they produce in different animals are nearly the same, and appear nearly in the same order, but with more or less rapidity; in general their effects are felt from the third to the tenth minute after the wound has been inflicted, and they are very rarely retarded for more than half an hour. 3. When the animal is just caught, its bite is more deleterious than when it has been confined for a length of time; yet it does not entirely lose its venomous properties, even when the reptile has been confined and deprived of food. In this case, however, it cannot kill robust animals, although it still proves destructive to pigeons, chickens, &c. 4. When the same reptile has bitten several times in the same day, the first is always, cæteris paribus, the most deleterious. 5. The poison of these reptiles does not always prove fatal. In general, the danger may be calculated by the intensity and the rapid manifestation of the symptoms. 6. The time at which death takes place varies. Dogs do not perish so soon as birds; a circumstance which does not appear to depend on the bulk of the animals. 7. The symptoms of the poisoning more certainly occur, when the venom is applied to an incised part, than by making the serpent bite: in both instances they are similar, and prove equally fatal to small animals."

Of Rattle-Snakes (Serpens à Sonnettes).—There are eight species of these snakes forming the genus *Crotalus*. All of them possess moveable joints below the tail, from the motion of which a peculiar sound is emitted, and hence their name. The fatal effects of the bite of these reptiles is illustrated by the case of *Soper*, who died in St. George's Hospital, in consequence of being bitten by one which was brought to this country in 1809. The case is quoted, at length, from the Philosophical Transactions for 1810, without any comment by our author.

Of the Scorpion.—The effects of the sting of the scorpion upon man vary according to the bulk of the insect, and the climate in which it is found. In general they are more dangerous in tropical climates. The symptoms are circumscribed redness, which extends a little, becomes slightly black in the centre, and is usually followed by much pain, inflammation, swelling, and occasionally pustules. Some persons also display symptoms of fever, rigors, vomiting, hiccough, pains over the whole body, and trembling.

Of Spiders (Araignées).—Some of these are venomous. Swelling of a livid hue, inflammation, and sometimes phlectenæ, are the attending symptoms.

Of the Tarantula (Tarentole).—Many fabulous writings of the direful effects of the sting of this insect have been given to the world. It is now well ascertained that it is merely local, producing simply tumefaction of the part, and some degree of inflammation.

Of Bees (de l'Abeille et du Bourdon).—Several observations as to the danger which sometimes follows the sting of these insects, are quoted from *Zacutus Amoreux*, *Swammerdam*, and *Ludowic*. The general symptoms are pain and erysipetalous tumefaction of the parts surrounding the wound.

Of the Wasp and the Hornet (de la Guêpe et du Frelon).—Several facts are also quoted from several authors in proof of the venomous property of the sting of these insects. In one case, quoted from the Gazette de Santé (No. 45, p. 185, ann. 1776), the individual was stung in the palate whilst eating an apple, in which a wasp was concealed. Much inflammation and swelling ensued, which impeded respiration and occasioned death in a few hours.

The next section treats *of animals, the flesh of which when eaten produces deleterious effects.* These are chiefly fish, and particularly mussels.

On the subject of fish-poison M. Orfila offers nothing original; but has extracted the cases of poisoning arising from eating the yellow bill, the grey snapper, the dolphin, the conger eel, and the king-fish (Scomber *maximus)*, described by Dr. Chisholm*; and some by eating mussels, from Montegre† and other authors. In answering the query, " Quelle est la cause des accidens produits par les moules et par les autres poissons venimeux?" the opinion of Dr. Burrows, that it depends on a peculiar morbific change in the secreted fluids of these animals, which disposes to putrefaction, is adopted by our author, in preference to that of Clarke, Chisholm, and Beunie, that it is owing to the substances on which the fish feed. He says he is also convinced, that as far as regards mussels, much of the effects they produce depends on a peculiar idiosyncrasy of the individuals affected; and five cases, communicated by Dr. Edwards, are advanced in support of this opinion. Although we are willing to admit the influence of idiosyncrasy, yet, we are not much disposed to adopt this as a satisfactory explanation of the effects which are generally regarded as arising from fish-poison. Did they depend, even in the majority of instances, upon idiosyncrasy, they would occur at all seasons to the same individuals. Now we know, that in the great majority of instances this is not the case; and, therefore, the cause is to be looked for in some change in the fish, which is the offending cause. We may also advance, as an argument drawn from analogy, that putrifying animal matters are in a certain degree poisonous.

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* Vide *Edinburgh Medical and Surgical Journal*, October 1808.

† *Gazette de Santé*, Mars 1812.

On the subject of *animals being poisonous, owing to the depravation of their fluids by disease*, M. Orfila observes:

> " It has been long known that horses, kine, sheep, dogs, and even men, contract, under certain circumstances, diseases, in which the saliva, blood, and other secreted fluids, are altered, and become capable of producing, by their contact with living animals, a state of disease, sometimes followed by death: among these may be enumerated malignant pustules and ulcers, gangrene, rabies, &c."

The *malignant pustule* (Pustule *maligne*, *bouton malin*, *puce maligne)*, our author attributes particularly to the formation of a septic *virus* in diseased animals, which may be transmitted to man, if introduced by inoculation, or the application of it to an absorbing surface. The following case, recorded by Duhammel, and several others by various authors, are quoted from the work of Enaux and Chaussier, intitled *Methode de traiter les Morsures des Animaux Enragés* (Dijon 1785).

> " A boy who was employed in skinning an ox, which had been killed at a farm of the Gatinais, on account of disease, put the knife into his mouth. Very soon afterwards his tongue swelled, he experienced great tightness of the chest, his body became covered with pustules, and he died on the fourth day in a state of general gangrene. The farmer, who also was pricked in the hand by a bone of this animal, was attacked with violent symptoms of disease, his arm became gangrenous, and he died on the seventh day. A servant, who received some drops of the blood of this ox upon his cheek, was seized with inflammation followed by gangrene of the part."

The effects which occasionally arise from wounding the fingers with the point of the scalpel in dissection, are also regarded as supporting the opinions advanced of the origin of the malignant pustule. The symptoms of the disease are very fully detailed from the work of Enaux and Chaussier.

Rabies, M. Orfila conceives, may arise spontaneously either in men or animals; but it may also be communicated by the bite of an animal under the influence of the disease, as the saliva is at that time depraved. He notices the opinion of M. Girard of Lyons, who has contended that rabies is never communicated by the saliva, and that the symptoms are the effects of local irritation; but properly rejects the hypothesis. Several instances of spontaneous rabies are quoted from *Sauvages*, *Plater*, *Doppert*, and others. Bad food, hunger, great fatigue under an ardent sun, worms in the stomach, keen passions, fright, chagrin, anger, despair, and previous disease, are enumerated as causes of the spontaneous appearance of this dreadful affection; although undoubtedly these circumstances do not in all cases occasion it. The symptoms of the spontaneous disease closely resemble those of the communicated, which are thus detailed from the work of *Enaux* and *Chaussier*. We translate the passage closely on account of the interest which the disease has lately excited in this country:

" As the wound is the focus of the poison, it is always there the disease commences. If it be closed, the cicatrix becomes red, blueish, sometimes opens again, and exudes a reddish serum; but if it be still open, the edges turn back, the centre swells, assumes a redder colour than usual, and exudes a reddish serous pus. The sleep is restless, agitated, disturbed by visions and frightful dreams; the patient is overcome, heavy, plunged in a deep melancholy, for which he knows no cause, and from which nothing can divert him; from time to time he experiences heat, and a tremor, which, extending itself from the wound, seizes the whole body, and appears to terminate in the chest and the throat; the pulse is often small, hard, and wiry. This state characterizes the first stage of the disease, and continues from four to five days. In the second, all the symptoms are augmented; the pulse becomes quick, and indicates an irregular nervous fever, which destroys the vital principle; the patient feels a peculiar uneasiness at the chest and throat; respiration becomes difficult, and is interrupted by involuntary sobs and deep sighs; and convulsions supervene, which are renewed by the slightest cause. The mind is occasionally affected, the patient becomes furious, distrusts those who are about him, and tries to bite them*; every thing provokes and irritates him; lively colours, sunshine, acute sounds, sometimes even the simple agitation of the air renews his fury: although devoured by an internal heat, and tormented by considerable thirst, yet, he dares not drink; the sight of water, even the idea of it, makes him tremble; the eye is haggard, fixed, shining, and inflamed; the voice is rough; and the mouth filled with a frothy, gummy saliva. Sometimes preserving his judgment, gentle and peaceful, he is plunged into profound melancholy, he knows his misfortune, foresees it, and informs his friends; but the sight of water always produces a secret horror which his reasoning cannot overcome (whence the name *hydrophobia).* Distress of mind and vomitings aggravate these evils; the pulse becomes unequal and intermittent; a cold sweat extends over the whole body, and death terminates this scene of horror*."

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* This is a symptom very rarely perceived in men: it was not present in eight cases which we have seen. M. *Dupuytren* thinks it is peculiar to dogs.

On dissection of cases both of men and dogs, the victims of rabies, the appearances of disease have been of a very varied kind. The inner coat of the stomach has been observed inflamed, and sometimes the brain and spinal marrow; great quantities of worms have been found in the intestines; the lungs have been observed adhering, gorged with black blood, or dry and arid, and the heart pale and void of blood.

M. Orfila divides his observations upon the treatment of cases of poisoning by venomous animals into different sections.

Poisonous Serpents (Serpens Venimeux).—Under this head the first remedy he notices is the *guaco,* a plant which M. Humboldt found growing naturally in the plains and valleys of *Rio du Magdalena, Rio Cauca, Choco,* and *Barbacoas,* in the kingdom of New Grenada, and in the temperate region of *Tuffagafuga,* at a height of 940 toises, where the centigrade thermometer stood at from 17° to 22°. It is cultivated between the tropics at a height of 1400 toises, where the centrigrade thermometer falls at night to 5°. The most wonderful stories are told of the effects of the *guaco,* both as to its preventive and curative powers. The opinion of Humboldt is that the *guaco* operates as a security, by giving an odour to the skin, which is peculiarly disagreeable to serpents, and prevents them from biting. When a person has been bitten, the leaves, masticated and mixed with the saliva, are placed upon the wound, and some of the juice of the plant swallowed. Humboldt mentions, that a horse at Tuffagafuga, which had been bitten in the foot by a poisonous serpent, refused, at first, to eat the *guaco,* on account of its bitter taste and disagreeable odour; but soon after, as if conscious that it would cure, it ate of it greedily: and both the limb and animal were saved.

In examining the effects of the arsenite of potass and arsenious acid as a remedy in these cases, our author quotes largely from the second volume of the Medico-Chirurgical Transactions, to which we refer our readers; and from Russel's works, for proofs of the advantages to be expected from the *Tanjore pill*, which contains arsenious acid. The value also of *ammonia* or *eau de luce*, *olive oil*, *acids*, *cantharides*, *theriac*, *vipers' fat*, *leeches*, *suction*, *warm bathing*, and the *use of ligatures*, as remedies, are examined; after which M. Orfila offers the following directions as the most likely to prove efficacious in these cases. A ligature should be immediately applied above the bite; but it should not be too tightly drawn, nor kept too long applied, as either of these circumstances favour the disposition to gangrene in the part. The part should then be soaked in tepid water, and cauterized either with the actual or potential cautery. Scarifications are injurious; but the wound should be dressed with lint moistened with a mixture of one part of ammonia and two parts of oil. The internal treatment should consist of means calculated to promote perspiration and sleep; as infusion of orange or of elder flowers, containing in each dose from ten to twelve drops of liquid ammonia: Madeira wine, and etherized potions are also useful. If spasms, jaundice, or bilious vomitings supervene, ipecacuanha and tartar emetic must be given; and if gangrene, antiseptics exhibited. No solid food should be taken during the treatment; but merely light broths in very small quantity.

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* *Methode de traiter les Morsures des Animaux Venimeux,* p. 28.

The internal exhibition of volatile alkali, and the application of poultices of the cruciform and other emollient plants, are the remedies for the sting of the *scorpion*: and for that of *spiders*, theriac and lotions with vinegar. For the bite of the *tarantula*, M. Orfila advises merely local applications to allay the inflammation and tumefaction of the part; and, although he does not refuse to music the power of soothing pain by arresting the attention, yet he gives no credit to the stories told of its effects in these cases. In cases of stinging by *bees*, *wasps*, and *hornets*, the sting should, if possible, be first extracted, then the part well washed with salt and water, and the juice of the recent white poppy applied to the wound; or when this cannot be obtained, solutions of acetate of lead may be used.

In cases of *poisoning by mussels* and *fish*, after administering emetics and purgatives, sugar, moistened with twenty or twenty-five drops of sulphuric æther, should be administered, with some antispasmodic potion, and drinks, acidulated with vinegar, freely taken. Inflammation of the bowels supervening should of course be treated by antiphlogistic means.

In the *malignant pustule*, Chaussier and Enaux recommend incision and the application of caustic, which, favouring suppurative inflammation, remove the disposition to gangrene: and after the separation of the eschar, dressing the wound with cinchona bark, and camphor. In the last stage only of the disease are internal remedies, such as are of a tonic and antiseptic nature, useful. He condemns bleeding, and every means that can relax the habit.

In *rabies*, the first object of inquiry is, whether it be possible to cure the disease, either as it spontaneously occurs or is communicated, if it be fully developed. Many authors suppose this to be possible; and M. Orfila quotes cases of *Willoughby*, *Shoolbred*, *Mead*, *Boerhaave*, *Rutherford*, and M. *Grisly*, in support of this opinion; but at the same time states, that the recent experience of *Dupuytren*, *Majendie*, and *Breschet*, are far from confirming the statements of these practitioners. He notices also the effects of opium, and laurel water; but on taking a general view of the various kinds of practice that have been recommended, he is disposed to conclude that no dependance can be put upon any thing, except the destruction of the part by the actual cautery. Our own opinion is, that safety is only to be found in the destruction of the part; but we would prefer the knife for this purpose: and, we must confess, that in more advanced stages of the disease the great advantages that have been derived from copious bleeding would lead us to give that practice the preference to any other; and to afford it at least a fair trial.

An Appendix is added to this section of the work, containing answers to objections, and remarks on a few sujects which were overlooked in the First Part. Some objections advanced by *Dehorne* against the opinion that *corrosive sublimate* is absorbed, are successfully combated, and instances detailed of the poisonous effects of this substance, even when externally applied; and the same is true with regard to *artificial cinnabar*, *sulphuret of arsenic*, and *acetate of copper*.

The statement in the first volume, that sugar is the antidote in cases of poisoning by *verdigris*, is here again considered; and it appears from our author's experiments, that sugar at the boiling temperature rapidly decomposes the solution of verdigris, changing the salt into an orange yellow protoxide of copper, while acetic acid is disengaged. The same effect is produced by gum, some oils, and several other vegetable substances. But as the heat of the stomach is much inferior to the temperature of boiling water, M. Orfila endeavoured to ascertain by new experiments, whether any decomposition is effected when sugar is administered in cases of poisoning by verdigris. The following were the results:

> " 1. That sugar exercises no chemical action on verdigris in the stomach; that it does not prevent it from acting as a caustic, and consequently that it is not its counterpoison. 2. That it is useful for allaying the irritation produced by this poison, after it has been previously expelled by vomiting. 3. That in the instances of cures in cases of poisoning which have obtained for sugar the title of a

specific, the verdigris had either been vomited, or taken in very small quantity."

M. Orfila, however, found that albumen decomposes verdigris as well as corrosive sublimate, even at the ordinary temperature of the stomach; and hence may, with propriety, be regarded as one of its counter-poisons. In cases, therefore, of poisoning by verdigris, he recommends albumen to be largely administered in the first instance; and afterwards saccharine matter, to allay the irritation excited.

Our author enters fully into the question as to the efficacy of charcoal, as an antidote in poisoning by mineral substances, and decides against it; positively asserting that it possesses no influence in counteracting the power of corrosive sublimate, arsenious acid, verdigris, or the other metallic solutions, when taken in doses sufficient to operate as poisons.

Objections having been stated to the tying the œsophagus, as adopted by M. Orfila in many of his experiments, he enters into a defence of his practice in this particular, and concludes from a variety of experiments,

> "That a ligature upon the œsophagus of a dog produces a degree of fever too slight to kill it in a few days. 2. That if an animal thus treated be killed, no lesion is discovered on dissection of the body."

He proves, also, that in prosecuting experiments on poisons, it is absolutely requisite to tye the œsophagus, to prevent the substances administered from being ejected, and to ascertain the full effect of the poison on the stomach, and viscera.

The SECOND SECTION of the part of the work under consideration is extremely interesting; but of a nature which does not readily admit of analysis. It treats of *poisoning generally considered;* and is divided into two chapters: in the first of which the author endeavours to point out the means necessary for ascertaining whether the symptoms which appear in a suspected case be those of poisoning; and in the second he has thrown together a few observations on slow poisoning.

The first chapter, "*Des moyens proprés à constater l'existence de l'Empoisonnement,*" embraces six articles, of each of which we would wish to give a brief sketch, but our limits forbid it.

1. *Des maladies qui peuvent etre confondues avec l'empoisonnement aigu.* The diseases which may be mistaken for the effects of poisoning, are *indigestion, cholera morbus, black vomiting, diarrhœa,* and *malignant fever.*

A person afflicted with dyspepsia may be apparently in tolerable health, and, yet, very soon after a meal, be seized with symptoms resembling those of poisoning; as for example, colic, nausea, vomiting of matters which assume a variety of colours, but sometimes *green*, and spasmodic constrictions. In illustration, the case of M. *Darcet*, the father of the celebrated chemist, who was supposed to have been poisoned by his servant Dominic François, is detailed from the notes of M. *Chaussier*. This old man had gone to bed apparently in good health, but was awoke at four o'clock in the morning, with symptoms which strongly indicated that poison had been administered, and died in twenty hours. On opening the body, the stomach was found perforated with several holes and eroded in two places; but on the examination of the contents of the viscus, and of the matters found in the abdomen, not the smallest trace of any thing like poison could be discovered. Another similar case is quoted from the work of *Gerard* on Spontaneous Perforations of the Stomach; and the cases of *Bonet*, *Morgagni*, *Lieutand*, *Hunter*, *Leat*, and *Chaussier*, are referred to in support of the fact, that perforations of the stomach may spontaneously occur, depending altogether on an internal cause, and produce death in a few hours.

The symptoms of *cholera morbus* and *melæna* still more closely resemble those of poisoning; and in the event of their proving fatal, indications of inflammation and abrasions of the viscera are frequently perceived on dissection. In *malignant fever*, many symptoms are very similar to those produced by poisons that act on the nervous system, and dissection, far from clearing any doubts, tends rather to augment them. M. Orfila gives the following as rules which may guide the practitioner in forming a correct diagnosis.

"1. He must pay attention to the season of the year and the prevailing diseases. *Cholera-morbus*, for example, prevails chiefly in those months of summer which approximate to autumn, and in autumn. There is also a particular state of atmosphere and season in which colics and vomitings are epidemic.

"2. He should endeavour to ascertain the habits and prior life of the patient: particularly whether he was a valitudinary, or had any disease which was but little understood, or any hidden vice; as it is to be presumed that a man, who is otherwise in the enjoyment of perfect health, would not be suddenly attacked by violent symptoms from an internal cause, or at least such as to destroy him; Nature alone, or aided by art, relieving such attacks when the patient is otherwise healthy and robust.

"3. The presence or absence of fever should be particularly noticed, because it rarely happens that affections occasioned by internal causes are exempt from it, whereas cases of poisoning are generally free from it, at least in the commencement.

2. Des moyens à l'aide desquels on peut parvenir à reconnaître la nature de la substance qui a occasionnée l'empoisonnement.

No method has yet been discovered by which the presence of the vegetable poisons can be certainly detected in the stomach: but the mineral poisons, being objects of chemical analysis, are more readily discovered. These poisons are examined by our author under the three forms of solid, fluid, and gaseous bodies.

In examining the *solid* poisons, it is first necessary to determine whether they belong to the organic or inorganic kingdoms. If they are organic bodies, they exhale, when placed upon a red hot iron plate, an odour of caromel, or of vinegar, or of burnt horn, and leave a charcoal more or less abundant. The odour exhaled from inorganic bodies is of a very different description, and no carbonaceous residue is left. Having determined this point, M. Orfila next lays down rules for ascertaining to which of the kingdoms of Nature the substance, if an organic body, belongs; or, if inorganic, the mode of effecting its chemical analysis; and in this manner he passes through each of the orders of poisons, solid, fluid, and gaseous. As the remainder of this article does not admit of analysis, so as to give a satisfactory specimen of it to our readers, we translate the following as a specimen of the manner in which it is executed.

"GASEOUS POISONS.

"If it be required to determine the nature of a gaseous poison, the following rules must be observed, provided, which is very probable, that the deleterious gas is one of the following: chlorine (oxymuriatic gas), nitrous acid gas, ammonia, hydro-sulphuric acid (sulphuretted hydrogen), sulphurous acid, protoxide of azote, azote, carbonic acid, oxide of carbon.

"The first step is to ascertain whether it be a coloured or colourless gas.

Coloured Gases.	*Colourless Gases.*
Chlorine, greenish yellow.	All the others above named.
Nitrous acid gas, orange yellow.	

"The next step is whether it be odorous:

"*Gases having a powerful odour.*	"*Inodorous, or scarcely odorous gases.*
Ammonia, odour of volatile alkali.	Protoxide of azote.
Hydro-sulphuric acid, odour of rotten eggs.	Azote.
Sulphurous acid, odour of burning sulphur.	Carbonic acid.
	Oxide of carbon.

"To ascertain the species of the inodorous, or scarcely odorous gases, a lighted taper must be plunged into a receiver full of the gas to be examined.

"In protoxide of azote it will burn with much brilliancy.

"In azote it will be instantly distinguished; but the gas, when mixed with lime-water, will not throw down a white precipitate.

"In carbonic acid gas it will be also extinguished; but lime water will be precipitated white by it.

"In gaseous oxide of carbon it will burn with a bluciah white flame, and the residue of the combustion will precipitate lime water."

The other divisions of this article relate to the indications which may be drawn from the symptoms with which the patient is afflicted: and those that may be drawn from the state of the organs after the death of the individual who has been poisoned. Under both of these heads many interesting and useful remarks will be found, which we regret our limits prevent us from even enumerating. The following, which are the results of the observations connected with the examinations *post mortem*, are too important not to be particularly quoted.

"1. The corrosive, the acrid, the astringent, and some part of the acro-narcotic poisons always produce inflammation in one or several parts of the alimentary canal, when they have been taken in large doses; but this is not the case with the narcotic and part of the acro-narcotic poisons.

"2. It is nevertheless perfectly certain, that under certain circumstances, some of the corrosive and acrid poisons have produced death, without leaving the smallest trace of change in the alimentary canal.

"3. That the circumstance of no alteration being found in the viscera cannot be regarded as sufficient evidence to prove that poisoning has not been the cause of death, as the agents employed may have been the narcotic or certain acro-narcotic poisons.

"4. That in a case of sudden death attended with severe symptoms, if the alimentary canal be found inflamed, corroded, or ulcerated, there is some reason for supposing that poison may have been the cause; but it cannot be positively affirmed, since we have shewn that many idiopathic diseases resemble cases of poisoning in their symptoms; and the same appearances are observed also in the dissection of the bodies analogous to those produced by the corrosive poisons.

"5. That in general the morbid appearances in the lungs, the brain, the heart, and the other organs, produced by a great many causes, might be regarded as proofs of poisoning.

"6. But no proof of poisoning can be admitted as legal, unless the presence of the poisonous substance can be unequivocally demonstrated, either by chemical analysis or its physical properties.

"7. That in a case in which it might be supposed that the poison was in too small quantity to be discovered; yet when the morbid appearances in the alimentary canal are considerable, and other circumstances are such as to raise a suspicion of poison having produced the death of the individual, the practitioner ought to state to the judge, that although the probabilities are in favour of the supposition, yet there is no proof of the poisoning."

Rules as excellent are laid down as to the method of proceeding in determining the nature of the poisonous substance that has been employed, when it has not been all swallowed, and when it is mixed with tea, wine, or any other kind of food.

The third article examines the question, whether experiments upon living animals can be regarded as the proper means of ascertaining the existence of poisoning: the fourth points out the method of distinguishing whether the poison has been introduced into the alimentary canal during life, or after death: the fifth treats of the poisoning of many individuals at the same time: and the sixth, of poisoning in cases of suicide and homicide.

The second chapter of this section, on slow poisoning, *de l'Empoisonnement lent*, is certainly the least satisfactory of any in the work; but this arises more from the nature of the subject, than any deficiency on the part of the author. Upon the whole, we have to close our analysis of this work, by expressing our hopes that it may be studied with the greatest attention, not only by the student, but the actual practitioner; so that our courts of justice may, in future, display proofs of the scientific character of the profession, instead of exhibiting, as has hitherto been too frequently the case, most lamentable, not to say highly reprehensible, proofs, how little is known regarding the effects of poisons on the animal œconomy; and how much the study of forensic medicine has been neglected in Great Britain.

II.

Observations on the Harveian Doctrine of the Circulation of the Blood. By GEORGE KERR. 12mo. pp. 100. London, 1816. Longman and Co.

To lay aside the methods of thinking which we have imbibed from our earliest education, and to examine the subject of this treatise with impartiality, is a task of considerable difficulty. We are unaccustomed, however, to condemn the production of any writer, before we have attentively examined it; and we hope, in the present instance, to show as great an inclination to profit by good arguments, as to expose those which are specious and invalid.

In does appear extraordinary, as the author, whose book we are about to consider, observes, that the physiological and medical works of the ancients are now in so little estimation, whilst we admit their superiority in many branches of science and literature, and hold as models their architecture, statuary, engravings, and all works of art which have been preserved to our times. To what can we attribute this injustice of the moderns? Truly to nothing, as far as concerns Medicine, as this author tells us, but to the introduction of the doctrines of Harvey respecting the circulation of the blood; for, since his time, the writings of the ancient physicians have been generally disregarded*; and the opinion of Erasistratus, that the arteries were filled with invisible vital spirits, has been disbelieved: the consequences of which have been "a succession and multiplication of theories, in physiology and disease, that *baffle* all description." And what benefit has been produced by this supposed discovery of the circulation? The cure of diseases was as well understood by the ancients as it is by us; and in many cases it can be shewn, that, after the time of Harvey, we entirely lost sight of approved methods of treatment in daily use among the ancients, to which we are now recurring, as modern improvements. This *pains-taking* anatomist opened many living animals, and made numerous experiments, without establishing one fact of which the ancients were ignorant; having recourse, *for the most part*, to reasoning from probabilities, and overlooking entirely, as far as one can collect from his writings, the most formidable objections to his doctrine.

This is the substance of Mr. Kerr's *exordium* to his observations on the Harveian doctrine. It is boldly written; but that we can excuse. Those who write against generally received notions, whether justly or erroneously, require to display a certain degree of confidence in order to gain public attention. It is, however, equally foreign to our object, either to enter into a comparison of the ancients with the moderns, or to waste remarks upon unsupported assertions: let us look to the arguments which can be advanced in the present day, to render the Harveian hypothesis improbable, or prove it to be in any measure untrue.

As the arteries are generally found empty after death, Harvey supposed that the effort of the heart and vessels, at the very last moment, is sufficient to throw the whole contents of the arterial system into the veins. "But the veins," says Mr. Kerr, "are not found distended after death; on the contrary, they shrink in many parts of the body, the cold condensing their contents; nor are they in capacity equal to receive, in addition to their usual contents, a quantity of blood sufficient to fill the arterial system, as the simple inspection of a blood-vessel subject sufficiently shews."

Whoever has seen the distended and swollen state of an undissected limb, in which both arteries and veins have been injected, will not rely much upon reasoning from this source concerning the bulk of their natural contents. The great capability of dilatation of the superficial veins is known to every one; and the deep-seated veins, which are similar in structure, probably possess the same properties. We do not, therefore, think that the author, unless he be much better acquainted with the quantity of blood contained in the veins during life than ourselves, has sufficient grounds for affirming that they cannot, in addition, receive as much blood as would fill all the arteries. " In cases of suspended animation," he continues, " when the motion of the heart has ceased, it is reasonably to be supposed that the whole blood is then accumulated, as we say, in the venous system, although no marks of distension appear in the veins." But as the superficial veins only can be observed under these circumstances, and the empty state of the arteries is taken on supposition, we cannot believe that the author places much confidence in this ingenious observation. The next, however, he considers a strong objection to the Harveian hypothesis.

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* From the same cause, as we are afterwards told, the writings of the moderns have been also brought into disrepute: "Medical and physiological theories have, ever since the time of Harvey, become the very *scorn* both of the *well-informed* and the *vulgar*."—p. 77.

> " Although the globules of blood have been distinctly seen by many, no anatomist or physiologist has yet discovered the anastomosis of the terminating arteries with incipient veins, by which these red globules should pass. *In cold-blooded animals, this anastomosis is distinctly seen; but I speak of animals having lungs.*"—p. 18.

According to the testimony of all anatomists, except Mr. Kerr, many cold-blooded animals have lungs. In all the amphibious class the lungs are as visible as the heart itself; and we should as soon expect an anatomist to overlook the one as the other. If, in the foot of a frog, the anastomosis of minute arteries and veins is *distinctly* seen, there is surely some probability that the arteries supplying the limb of a warm-blooded animal terminate in a similar way, although in the latter instance we have never been able to shew it to be so, " while the compages of the body remain entire." Philosophers have not yet discovered a microscope for viewing minute objects, whilst enveloped in parts that are not very transparent. The globules of blood have not been seen in the living system, except in the microscopic examinations of cold-blooded animals. And this brings to our minds a question not very easy of solution. How has the anastomosis of arteries and veins been distinctly seen in cold-blooded animals, if not by the progressive motion of globules of blood from the one to the other? Had Mr. Kerr given himself the trouble to ascertain a fact which he states with so little scruple, it is possible that he would at the same time have been convinced, that living arteries, in these animals at least, contain blood which is in its progress towards the veins.

In cases of amputation of the thigh, the femoral artery, if left unsecured, would pour out the greater part of the blood of the body, and occasion almost immediate death. "The blood thus thrown into the vessel," says Mr. Kerr, "must, according to Harvey's doctrine, be returned continually to the heart; but no vein that can possibly return the blood from this artery exists after the operation, and regurgitation upon the heart is supposed impossible, on account of the valves at the origin of the aorta." Thus we are made to believe, that blood continues to be thrown by the heart into the divided femoral artery, to the exclusion of a sufficient supply to the rest of the system, after the application of a ligature, the same as whilst the vessel is left unsecured! The doctrine of the circulation, however, involves no such absurdity. From the moment a ligature is applied, the blood, impelled by the heart, follows its proper channels to supply all parts of the body; and the divided arterial trunk contracts gradually to a size proportionate to the number of branches which proceed from it, and which have their corresponding veins for returning the blood to the heart.

Upon the supposition that the pulse is really the progress of a portion of blood propelled, at certain intervals, through the left ventricles of the heart, Mr. Kerr asks, why is the beat of the heart, and that of the most distant pulsating arteries, exactly synchronous? This is a point which Harvey, with all his attempts to explain it, certainly left in a state of obscurity; but to us it seems to be now well enough accounted for. The arteries are at all times full of blood in the living body; and when the left ventricle contracts to throw its contents into the aorta, the column of blood in this and all the other arteries is propelled forward at the same instant towards the veins. It is therefore to be expected that, when the cylinder of an artery is compressed by the finger, the increased impetus of the blood through it at each contraction of the heart should be perceptible by a more powerful effort, being at that instant made to restore the artery to its natural diameter.

Various estimates are given by different physiologists of the velocity of the circulating blood; but the want of coincidence in these can afford no very powerful argument against the circulation. We wholly coincide with the author, that no means of ascertaining the precise velocity of the blood in the living body, whilst the vessels remain entire, has yet been discovered; and that no positive information concerning it can be gained from observing the velocity with which they pour out their contents when wounded; and until these things are accomplished, the propriety of asserting that the established principles concerning the motion of other fluids are here inapplicable, appears rather questionable.

Although the blood be essential to life, it is very doubtful how far it is concerned in nutrition and secretions; for it is a fact admitted by the most respectable authors, that, "after *death* has been occasioned by absolute starvation, the quantity of *red blood* is still very nearly the same as in the healthy body." We are at a loss to guess how this quantity of red blood was estimated after death. Did Mr. Kerr, or the most respectable authors to whom he alludes, ever see *red* blood in the dead body? If the former gentleman ever discovered *red* blood under such circumstances, it must, according to his own doctrines, have been contained in the veins, since the blood is never detained, as if in transitu through the arteries, unless these vessels have suffered injury, or death has been occasioned by suffocation. Examinations after death from observation, therefore, can give us no information respecting the quantity of red or arterial blood that was in the body during life; and arterial is the only kind of blood which has been supposed by physiologists to answer the purposes of secretion, if we except the functions of the liver.

Again—"What becomes of the arterial blood transmitted to a limb when the principal vein is tied?" In some part of his book, this author mentions the saphena as the principal vein returning the blood from the foot; but whether he here refers to the upper or lower extremity, to the veins that are superficial, or those which are deep seated, is not of much importance. The veins of all the extremities are so numerous, and their inosculations with each other by considerable branches so frequent, that we do not apprehend the author will make many converts by answering the question he proposes in his own way. In the intestines there are two venous trunks, for the most part, to one artery; but there are no trunks corresponding to the superficial veins of the extremities. We shall not enter into the reasons for this; but we will beg the author's indulgence whilst we relate to our readers an experiment.

If, says Professor Emmert*, the mesenteric vein of a rabbit be tied near its junction with the *vena portæ*, it will die in three quarters of an hour with signs of the greatest debility. Examination of the contents of the abdomen after this experiment shews the whole of the small intestines, even to the duodenum, of a dark-brown colour on their outer, and more particularly on their inner surface, from the distension of innumerable vessels with blood. Under the villous coat (which looks altogether like a mass of coagulated venous blood), there will be found also small collections of venous blood; and on the inner surface of the villous coat, fluid blood will be observed to have extended so as to tinge the contents of the intestines of a red colour. If a portion of the intestine be cut through, a quantity of fluid venous blood issues through the opening, chiefly from the villous and proper coats. In the stomach, and upper part of the duodenum, the vessels are likewise filled with blood, but to a less degree, as there is no exudation of blood on their inner surfaces. The vessels of the upper part of the intestines are distended in a very slight degree, and in the rectum no appearance of this kind is observable. The large vessels of the mesentery are filled with dark fluid blood, even to bursting, and the mesenteric glands are of a dark red colour, affording a great quantity of blood when cut into. We return to our proper occupation.

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* Archiv für die Physiologie, von Reil and Autenrieth, 12 vol. 1815.

If we may believe Mr. Kerr's assertions, all experiments made upon the living body under the influence of extreme pain, when the whole animal economy suffers from violence, must afford results but ill calculated to improve our knowledge of the mode in which the vital powers are naturally exercised, and never have added any thing of real importance to medical science. These remarks, however, are hardly consistent with what is stated in another part of his book, that "the experiment of applying two ligatures to an artery, in the living subject, to ascertain whether blood is to be found between them, is certainly well calculated to establish the fact, whether blood is really contained in the arteries, or not." It is possible to lay bare a portion of the carotid artery of an animal, from which no visible branches are given. After having done this, we have at the same instant applied two ligatures around the vessel, at a distance from each other; and on puncturing the portion of the vessel intervening between them with a lancet, blood has oozed out through the opening. As experiments are most to be relied on, when they are not tried to establish preconceived opinions, we think it best to refer our readers to an author who has particularly described the effects of applying two ligatures to a portion of the carotid at the same instant, without intention of proving that blood is naturally contained in the arteries*. But it is in vain to hope, by experiments like these, to overturn such arguments as our author adduces in the following passage:

"It is not surprising that different opinions have been formed, on the question, whether blood be naturally contained in the arteries or not. When wounded, they pour out blood, and the conclusion of those who judge merely from this unconnected fact would be, that they are naturally full of that fluid as well as veins. The doctrine of Erasistratus was founded upon *more accurate observation;* he admitted the fact, that wounded arteries pour out blood—but *affirmed* that it was derived from a distance, immediately upon the infliction of a wound; and as we must bear in mind that both he and Herophilus were expert anatomists, and gave names to some of the most delicate and minute parts of the body, which remain unchanged to the present day, we must admit that their means of forming a sound judgment on the question, or, in other words, of ascertaining the fact, were fully equal to our own."

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* *Parry on the Arterial Pulse,* p. 20.

In the next place, the question whether there be blood in the arteries is decided, without the necessity of any further investigation, by an experiment on the human living body. In old people the temporal artery is seen prominent and pulsating, and is of the sound colour as the surrounding skin, while the veins in the neighbourhood are, as usual, blue. Compress the artery with the finger, so as to stop that pulsation, and it appears a little raised on the side next the heart, but is still colourless. Then divide it freely,

"And the first blood thrown out will have the appearance of bloody vapour for two, three, or four pulsations—afterwards the blood becomes of a darker colour, and the vessel acquires, by degrees, the deep colour of a vein, and then the blood does not flow *per saltum,* but equally, as in common blood-letting."

To those who have seen this bloody vapour, or the temporal artery of the deep colour which a vein of corresponding size has, all further investigation respecting the doctrine of the circulation may be needless: for our own parts, we have not been able to see either the one or the other. The anatomists of the present day are not *expert* enough, or have not bestowed *names* to a sufficient number of parts of the human body, to be entitled to that deference which Mr. Kerr pays to the ancients; and therefore when they say that the differently constituted coats of arteries are not diaphanous as veins, so as to allow the colour of the blood to be equally seen through either, he sets them right by saying, that "injections appear as distinctly in arteries as in veins." It is tedious to catch all the phantoms of arguments that this author has advanced, and expose their fallacy. Have teachers of anatomy, "in their zeal to promote and maintain the Harveian hypothesis," asserted there are no pellucid arteries in the body? Have they asserted that the small arteries are not equally pellucid with larger veins, whose coats are of the same thickness? or have "injections," appeared "as distinctly," to Mr. Kerr, through the dense coats of the femoral artery, as when in the femoral vein, whose coats have not *a fourth* part of the thickness of those of the artery to which it corresponds?

The structure of the valves of veins, which were demonstrated by Fabricius not long before Harvey wrote, do not absolutely prove the *circulation* of the blood; similar valves exist in the lacteals and lymphatics. But the structure of those valves shows, that when the blood does move in the veins, it can only move in a direction towards the heart; and it is the application of this fact to some very simple experiments which has enabled Harvey to draw some strong arguments in favour of the circulation from the existence of the valves. When the superficial veins of the arm are distended from the application of a ligature, the situation of the valves of a vein is pointed out by the appearance of knots or irregular swellings in its course. Place a finger just below one of the valves, and compress the vein, so that no blood can pass through it from the hand; then empty the vein above the valve by pressing the blood forward towards the heart with another finger until it has passed another valve. The portion of a vein between two valves thus emptied, is filled as soon as the finger first applied is removed. This experiment may be repeated a thousand and a thousand times, in quick succession, and you will find, says Harvey, by this means, so much blood transmitted through only a portion of a single vein, in a short time, "ut de circulati sanguinis, ab ejus celeri motu, te persuasissimum putes." The ancients, being ignorant of the valves of the veins, could not follow the same course of reasoning as Harvey does here, although they had observed, that upon the application of a ligature to a limb, the veins swelled between that ligature and the extremity: yet, because they had observed this, and because the lacteals have, valves, Mr. Kerr thinks himself justified in asserting, that the "presence of valves in the veins affords no proof of the circulation, nor *renders it in any degree probable.*" A rapid repetition of Harvey's experiment would soon exhaust the veins of the hand of all its blood, if there were no channels by which a fresh supply could be furnished; and as the valves of the veins allow the blood to move through them only in one direction, we are compelled to believe that the blood, which it is still found to distend the veins of the hand as if no such experiment had been made, must have come thither by the arteries, or been absorbed from the surrounded atmosphere.

As blood can move through the veins only in a direction towards the heart, on account of the valves, how does it happen that half the blood in the body can be discharged through an opening in a vein of the extremities, unless it come thither by the arteries? yet the existence of these valves does not in any degree render the circulation of the blood probable!

Mr. Kerr informs us, that, "in a full grown man, four pounds and a half at least of blood would be necessary to fill the arteries, *in addition to what is found in the veins,*" so that the circulation, according to the Harveian hypothesis, might be complete. Let us suppose that he meant four pounds and a half, without this last *addition*, and the calculation is far above what to us appears correct. Was it estimated from the examination of a blood-vessel subject? With our best endeavours we have never yet been able to throw into the arteries of an adult body two thirds the quantity here stated to be necessary to fill them, although the four cavities of the heart have been filled in the attempt, two only of which are distended at the same time in the living heart, as Harvey well knew, and as every other anatomist knows, who has seen the heart of a living animal in action.

We have lately had occasion to remark, that wounds penetrating into the cavities of the heart are not so instantaneously fatal as wounds of the great arteries or veins, just before they join the heart. This has been attributed, by the believers in the Harveian doctrines, to the muscular fibres of the walls of the heart contracting so as to close the opening through them, preventing the sudden and copious effusion of blood, and allowing hæmorrhage to prove fatal by frequent recurrence. The right ventricle of the heart, which may as properly be called the anterior ventricle, is most exposed to danger from external violence, and there are numerous cases on record, where a wound into this ventricle has occurred, and death not followed for five, ten, or even fifteen days. The cases of wounds penetrating the cavity of the left ventricle are comparatively few, and in most of them the injury has instantly proved fatal. Saviard, however, assures us, that he has found both sides of the heart pierced through, and yet the patient did not die until the fifth day*. Mr. Kerr has brought forward some of these facts to subvert the Harveian doctrine. Where the left side of the heart is wounded, so that the ventricle is penetrated, the sudden death that ensues, he says, is evidently not from loss of blood, "for very little is effused:" yet immediately afterwards he quotes a case of this kind from Diemerbrock, who accounts for the absence of the pulse directly after the injury, "because the blood had flowed through the wound of the heart into the cavity of the thorax, instead of being propelled into the aorta." This occurrence of instantaneous death with very little loss of blood, after wounds of the left ventricle, is stated by Mr. Kerr, to enable him to reason from an experiment, which, if we may judge from the manner he relates it, he has never made.

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* *Journal de Medicine,* tom. xlvi. p. 435.

"Let the thorax of the dog be laid open, the pericardium also opened, and a merciful enough way to terminate his sufferings will be to suddenly pierce the left ventricle with a scalpel, or to discharge a pistol ball through it. In either case life will be instantaneously extinguished, and the pulsation cease in all the arteries; very little blood being discharged from the wounded heart. According to Harvey's hypothesis, the arteries of this dog ought to be found full of blood, for the pulse being instantaneously extinguished, they could not propel their contents into the veins, nor could it return into the cavity of the heart, on account of the semilunar valves. But if, even in this case, the aortic system is found empty, the conclusion is inevitable that the arteries do not naturally contain blood, and that no such contractile power is wanted in them, as the followers of Harvey contend for."

Mr. Kerr does not positively tell us whether the arteries will be found empty, or with blood in them, after this experiment; but he reasons as if both these were the case. Let us, however, suppose that they are found empty, or nearly so; the presence of blood naturally in the arteries, so as to distend and maintain them in the form of *tense cylindrical cords**, is, we trust, sufficiently shewn by other experiments. Hence the inevitable conclusion will be, that the arteries are capable, when no longer assisted by the heart, of contracting so as to force into the minute veins all or a part of the blood which was in its progress through them at the moment the action of the heart ceased. This is the contractile power which the followers of Harvey contend for, and which they have, by many examples, proved; and although Harvey did not explain the matter so as to satisfy his followers, he by no means asserted that the elastic arteries were destitute of all power of diminishing the diameter of their cavities. We have tried, in a warm blooded animal, immediately after it was killed, to throw injections into its arteries, and have found so much resistance from them, that the great arteries would receive very little injection, and none of it could be made to reach those of smaller size: when the same attempts are made on an animal several hours after death, the arteries dilate readily, and are injected to their minutest visible extremities. We state the facts, and leave our readers to judge to what these differences are owing: they are enough to persuade us, that we require to be cautious, in determining the size, as well as the properties, of arteries in the living body, from our examinations of them at a remote period after death. One argument more against the circulation deserves to be noticed.

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* This is the feeling which an artery of a living animal gives to the fingers, when dissected and exposed.

> "When we find, in a case of pthisis pulmonalis, that an entire lobe of the lungs has been destroyed for some time before the patient's death—a case that not unusually occurs—how then is the continuity of this circulation preserved? In such cases, it is true, Mr. Abernethy has found the foramen ovale open, but that circumstance will not explain why effusion of blood does not take place in the thorax, or why penetrating wounds in the lungs are not attended with a fatal effusion of blood."

This is the first time we have received a hint that penetrating wounds of the lungs, when deep enough to wound any considerable arterial branches, are not attended with a fatal effusion of blood. After the destruction of a portion of lung by phthisis, we have as much right to ask the author, why the vital spirits, which he supposes to fill the arteries, do not escape, as he has to demand of us why effusion of blood does not take place into the thorax: and the answer with which we shall have reason to be mutually satisfied, is, that a process takes place by which the arteries are plugged up, so as to prevent either blood or vital spirits from escaping. Are we to tell how the continuity of the circulation is kept up in the portion of lung destroyed? or is this evidence that, because of the destruction of such a portion, the supposed continuity of the circulation is not preserved in the rest of the lungs? In the concluding part of his book the author recurs to this subject in a much less objectionable way.

> "In many cases of pulmonary consumption, before the patient dies, the lungs are almost completely exhausted, or, as Blumenbach expresses it, there is nearly a *total consumption*, when, perhaps, not one fortieth part of the substance of the healthy and perfect lungs remains. In this state of the lungs the Harveian doctrine assumes that the whole blood of the body passes through this remaining portion, many hundreds of times within a few hours. Yet no blood is found extravasated in the thorax, on dissection; nor are the vessels of the remaining part of the lungs enlarged."

For the novel application of these observations, the author certainly deserves commendation. The only reply we can make is, that we have never been able to convince ourselves that a man can live *almost entirely* without respiration, nor with only a fortieth part of the lungs capable of performing that function; that a person in the last stage of a consumption is generally so emaciated and feeble, that it is scarcely allowable to apply to such a case the calculations that have been made of the quantity of blood passing, in any given time through the lungs of a healthy adult. Does the author think it probable, that, if an artery of considerable size were opened, in a person *nearly* in a *total consumption*, a stream of blood would flow from *it*, and *that* life might be thus put an end to? If this experiment *succeeded*, as we rather [illegible] would, is not one of two things proved? either that blood from the right side of the heart has passed through the remaining portion of the lungs, or that it has come *guttatim*, through the *foraminula* of the septum, which *foraminula* no anatomist has ever seen since Riolan demonstrated them.

We have thus far endeavoured to ascertain the merits of this work, by noticing the most prominent arguments it contains. There are many observations and assertions in it, which we deem it needless to refute. For example, it is affirmed that if the femoral artery or the axillary be obliterated, no arterial blood can possibly reach either the fingers or the toes; and the ingenuity of the most zealous Harveian will scarcely succeed in discovering how, the iliac vein being tied, blood propelled by the iliac artery can possibly be returned into the cava *!

A word of advice, and we have done with this author, whom our readers perhaps wish we had never introduced to them. Harvey, a zealous experimentalist, a strict observer of the phenomena of Nature, and a faithful recorder of them, is not a man to be lightly dealt with. Metaphysics may be studied in the closet; but those who turn their minds to physiology, are required to do something more before they attempt to overthrow its best established doctrines. Read all the books that were ever written upon the action of the heart, (and no one has written more accurately in this respect than Harvey,) and a very feeble impression will be gained of what that action really is; to be properly known it must be seen in a living animal, and the man who has not embraced opportunities of this kind to gain information respecting the circulation, will not be likely to benefit Science much by writing upon the subject.

III.

A Treatise on the Incubus or Night-Mare, disturbed Sleep, Terrific Dreams, and Nocturnal Visions; with the Means of removing these distressing Complaints. By JOHN WALLER, Surgeon of the Royal Navy. Small 8vo. pp. 115. London, 1816. Cox and Co.

MANY aberrations from the healthy state of the system, and some minor diseases, although they are productive of much inconvenience, and even obtrude vexatiously upon those comforts which are requisite to our happiness in this sublunary state of existence, have been nevertheless too much overlooked by modern medical writers. Among these, is the disease which is the subject of the little Treatise now before us, and to which modern physicians, as the author observes in his preface, " have paid little or no attention:" although " those of the sixteenth and seventeenth centuries seem to have well understood both its causes and cure." If the observation, " virum medicum melius publicæ saluti consulturum, si ad eos tantummodo morbos sanandos se accingeret, quos ipse jam fuisset perpessus," be true, this treatise should at least merit our attention; as Mr. Waller informs us, that his " principal information respecting it has arisen from a personal acquaintance with the disease itself, for a long series of years; having been a victim to it," says he, " from my earliest infancy:" adding, " I have never met with any person who has suffered to so great an extent from this affection, or to whom it was become so habitual." How far he has profited by his experience, we will endeavour to enable our readers to judge, by the analysis we are now about to lay before them.

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* In reference to the drawings which Astley Cooper has given in the Medico-Chirurgical Transactions, (vol. ii. plate 6.) of the course of the arteries after the operation for popliteal aneurism, there is a gross mis-statement. The skin is left covering the foot and ankle, whence it is said, " the engravings represent the arteries as *terminating* near the middle of the leg, but none appear to have reached *the feet!*"—*p.* 28.

Mr. Waller commences his treatise by an attempt to trace the history of the disease in the works of the early medical writers. The Greeks named it εφιαλτης, and the Romans *incubus*, both of which appellations are expressive of the sensation of weight and oppression on the chest experienced during the paroxysm, the principal characteristic symptom of the disease. Bonetus supposes that the disease was unknown to Hippocrates and Galen; but, our author has quoted a passage from the work ascribed to the latter, " de Utilitate Respirationis," in which it is particularly mentioned, and said to degenerate into epilepsy, "*verum ephialtes longo tempore perdurans in epilepsium convertitur;*" an opinion with which our author accords. Cœlius Aurelianus mentions, " upon the authority of *Silimachus*, a follower of Hippocrates, that this affection was once epidemic at Rome, and that a great number of persons in that city died of it:" and Mr. W. details a case in proof of its fatality; but we are of opinion that the death of the subject of this case is rather to be ascribed to the blow which his head received, as he fell upon it, when, by his struggles, he was thrown out of bed, and was found " with his feet still entangled amongst the bed-clothes."

We are rather surprized that, as our author particularly mentions the superior knowledge which the early writers possessed of this disease, he has not ventured to display a more extensive specimen of his reading and literary industry, for which so fine an opportunity offered. The works of *Oribasius**, *Paulus*

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* *Synopsis*, l. viii. c. 2.

Ægineta[1], *Fabricius*[2], *Fischer*[3], *Zeidler*[4], *Albinus*[5], *Stoll*[6], and many others, besides *Willis* and *Sennertus*, from whom he has quoted, would have afforded an ample fund both of instruction and curious and amusing information, perfectly new to the majority of his readers.

The following are the symptoms of the disease as experienced in the author's own person:

> " First then, this disease attacks always during sleep. This is a truth of which I am now well assured, although frequently the evidence of my senses has apparently produced a contrary conviction. Whatever may be the situation of the patient at the moment previous to the invasion of the disease, he is at that moment asleep, although the transition from the waking to the sleeping state may be so rapid as to be imperceptible. I will explain this part of the subject more fully by and by; at present we will assume the fact, and proceed to enumerate the symptoms. If the patient be in a profound sleep, he is generally alarmed with some disagreeable dream; he imagines that he is exposed to some danger, or pursued by some enemy which he cannot avoid; frequently he feels as though his legs were tied, or deprived of the power of motion; sometimes he fancies himself confined in some very close place, where he is in danger of suffocation, or at the bottom of a cavern or vault from which his return is intercepted. It will not unfrequently happen, that this is the whole of the sensation which the disease, for the time, produces, when it goes off without creating any further annoyance: the patient either falls into an oblivious slumber, or the alarming dream is succeeded by one more pleasant. In this case the disease is not fully formed, but only threatens an invasion; it proves however that the predisposition to it exists, and that the person is in danger of it. But when the paroxysm does actually take place, the uneasiness of the patient in his dream rapidly increases, till it ends in a kind of cousciousness that he is in bed, and asleep; but he feels to be oppressed with some weight which confines him upon his back and prevents his breathing, which is now become extremely laborious, so that the lungs cannot be fully inflated by any effort he can make. The sensation is now the most painful that can be conceived; the person becomes every instant more awake and conscious of his situation: he makes violent efforts to move his limbs, especially his arms, with a view of throwing off the incumbent weight, but not a muscle will obey the impulse of the will: he groans aloud, if he has strength to do it, while every effort he makes seems to exhaust the little remaining vigour. The difficulty of breathing goes on increasing, so that every breath he draws, seems to be almost the last that he is likely to draw; the heart generally moves with increased velocity, sometimes it is affected with palpitation; the countenance appears

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[1] *Opera*, lib. iii. c. 15. [2] *Diss. de Ephialte seu Incubone. Rostok*, 1627. [3] *Diss. de Ephialte sive Incubo. Erf.* 1728. [4] *Diss. de Incubo Lips*, 1643. [5] *Diss. de Incubo, Fr.* 1691. [6] *Prælectiones*, p. 353.

ghastly, and the eyes are half open. The patient, if left to himself, lies in this state generally about a minute or two, when he recovers all at once the power of volition: upon which he either jumps up in bed, or instantly changes his position, so as to wake himself thoroughly. If this be not done, the paroxysm is very apt to recur again immediately, as the propensity to sleep is almost irresistible, and, if yielded to, another paroxysm of Night-Mare is for the most part inevitable.

"Where the disease has not established itself by very frequent recurrence, the patient generally feels little inconvenience from it when thoroughly awoke; but where it is habitual, there will generally be felt some confusion in the head, with singing in the ears, a sense of weight about the forehead, and, if in the dark, luminous *spectra* are frequently seen, such as appear to persons who, immediately after gazing on a strong light, close their eyes. The pulse, I believe, will in all instances be found to be considerably accelerated; in my own case the motion of the heart amounts almost to a palpitation."—pp. 21—24.

Palpitation is a symptom, Mr. Waller observes, which has not been noticed by any other writer, excepting *Etmuller*. It increases in proportion to the length of the paroxysm, and "the difficulty the patient finds in waking himself." Priapism, also, frequently attends the paroxysm; while a sense of weight at the stomach, and an unpleasant taste of the mouth remains after it.

Besides these symptoms, which may be regarded as those common to incubus, others occasionally occur, the most alarming of which, to persons unaccustomed to the attack, is the hallucination which supervenes, when the paroxysm subsides without awaking the patient. This is the more impressive on a weak mind, as "the degree of consciousness," our author observes, "during a paroxysm of Night-Mare is so much greater than ever happens in a dream." Several amusing instances of hallucination are detailed; but we extract the following only, both because it is shorter than the others, and occurred to Mr. Waller himself.

"The instance I am going to relate happened on board one of His Majesty's ships at Spithead: I was lying in my cot, labouring under a paroxysm of Night-Mare; it was broad day-light, and I could perceive distinctly all the objects in my cabin, which came within the range of vision; I was likewise conscious of labouring at the moment under this disagreeable malady, when I heard distinctly a person approach the cabin door, and immediately after knock at it, and the well-known voice of a quarter-master, who was often in the habit of calling me, after repeating my name, informed me that the captain wished to see me immediately. I was unable to make any answer to this, although I attempted it; and both the knocking and the message were repeated, I do not now remember whether twice or *thrice*; I heard, however, the person retire from the cabin door. As soon as I recovered, I rose and hastened to obey the summons which I had received; but was soon informed that the captain was not on board, and that no messenger of any kind had been near my cabin."—pp. 47, 48.

Many of the stories of apparitions and supernatural warnings may be referred to the operation of this species of hallucination; but, as our author justly observes, "there are many cases to which it will not apply, neither can any one principle possibly explain them all." The Greek and Roman writers had noticed this hallucination; and in general attributed it, as well as the whole phenomena of *incubus*, to the agency of dæmons.

The predisposition to *incubus* is attended with a sensation of weight and uneasiness about the heart, a propensity to sleep, and an irregular association of ideas, which renders it impossible, when awake and employed in reading, to command the attention.

In noticing the various modifications of the disease, Mr. Waller refers to it all unpleasant dreams, in particular such as relate to falling down precipices; and those terrific impressions which frequently occur during sleep, and oblige the sleeper to vociferate loudly, and sometimes jump out of bed; and which is generally accompanied by shivering. He thus explains this circumstance:

> "Whatever may be the cause which induces this kind of shivering during sleep, the shivering itself appears to me evidently to be the immediate cause of the terror, and the accompanying terrific dream; and this I conceive to happen from association; for as this shivering is the kind of involuntary sensation we feel when suddenly alarmed, or even when we hear or read a tale of terror, the feeling itself becomes so associated with terror, as always to recal to the mind, even in sleep, the idea of it; the sensation being the same as if the nerves had actually received some terrific impression; and, as the imagination has full play when asleep, it is seldom long in furnishing the terrific object."—pp. 62, 63.

As incubus "will, for the most part, be found to be the constant attendant upon indigestion*," it may occasionally occur in the most healthy, if any food be taken which disagrees with the stomach, or remains in the superior portion of the alimentary canal: but that peculiar temperament which produces hypochondriasis and nervous diseases, is necessary to render a person subject to it, so that it can become habitual. Sedentary habits are very subject to it; and sailors, although they do not want for air and exercise, yet, as they "are accustomed to a coarse and unwholesome diet, are of all classes of men the most subject to night-mare and terrific dreams." When it occurs in early life, it often becomes habitual. It frequently accompanies hysteria, constipation, and chlorosis; but females are less subject to it than males.

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* Cœlius Aurelianus ascribed the paroxysm to this cause.—Ed.

With regard to the *proximate* cause of incubus, Mr. Waller observes, that the theories offered by writers have been too "various and discordant" to merit much attention. As to the *exciting* causes, which, by the bye, our author confounds with the *proximate*, the most common opinion is, that the paroxysm is brought on by lying on the back, owing to which temporary pressure of some of the viscera upon the respiratory organs is induced. This opinion, and also that which attributes it to a full meal before retiring to rest, is combated by the personal experience of the author, who has been attacked with it in every position of the body, and suffered most during a period of several years when he religiously abstained from eating supper, and dined at two o'clock. But

> "Experience," he adds, "has taught me that I may eat heartily of some kinds of food, just before going to bed, with impunity; whilst the smallest quantity of some other will inevitably bring on the disease, in spite of all the precautions that can be taken."

He also points out the fallacy of Darwin's theory, that nightmare is merely consciousness of the suspension of the power of volition, and a desire to recover that power.

Mr. Waller does not venture any explanation of the phenomena of incubus, but has arranged under four heads his observations on the paroxysm itself, and the immediate cause of it, to enable some one of more happy genius to frame a satisfactory theory. In these, he concludes that *incubus* is an absolute disease, which runs through regular stages, whilst the patient continues "to be, to all intents and purposes, in a natural sleep; that a suspension of volition always exists during a paroxysm of the disease," the circulation through the lungs and the action of the heart being interrupted; and, "that the difficulty of inflating the lungs is always increased in proportion as the patient becomes more awake:" but that unless the disease be habitual, "the patient is instantly liberated from the paroxysm, as soon as he can succeed in moving any of his limbs;" except in a protracted form of it, when severe struggles may occur without waking him or terminating the paroxysm. He conceives that the sense of oppression about the præcordia, the palpitation of the heart, and the difficulty of breathing, arise principally from a temporary paralysis of the nerves of the diaphragm and thoracic muscles, by which

> "The patient is rendered incapable of dilating the chest so as to allow of the expansion and consequent inflation of the lungs; the

blood consequently meets with some interruption in its passage through that organ, and this interruption is speedily communicated to the heart; the re-action which takes place here is quickly communicated to the whole system, and probably is the principal cause of the final solution of the paroxysm. How this solution is at length effected is, I confess, a difficult and obscure question."

Such is the author's theory; and we leave it without any comment, as it involves too many questions to be satisfactorily discussed in this place. The author himself is sensible of its defectiveness, particularly as far as regards the term paralysis, which, he observes, "must be understood in a different manner from that in which it is usually applied in medicine;" there being a consciousness "of the inability to move the muscles, and a constant attempt at the same time to move them."

Mr. Waller next gives a summary of the opinion of the older writers, quoting largely from that of Willis, from his work *De Anima Brutorum:* and then passes on to consider the *method of cure.*

Whatever may be the proximate cause of *Incubus*, we agree with our author that it is pretty evident the remote cause is indigestion, or that state in which the food, instead of being converted into good chyle, becomes, whilst yet in the stomach, ascescent; producing flatulence, acid eructations, and the whole train of dyspeptic symptoms. The paroxysm indeed is often induced by the distention of the stomach alone. With the view of removing this ascescent state of stomach, the use of alkalies is recommended, particularly the sub-carbonate of soda; the pleasantest vehicle for the exhibition of which, Mr. Waller found from his own experience, is beer or porter. Instead of rendering that beverage nauseous, it ameliorated it.

> "I grew fond of it, and drank as much every day as would receive about a drachm of the carbonate of soda, only at my meals; but whenever I found that sense of oppression about the præcordia which indicated the predisposition to Night-mare, I had immediate recourse to a large dose of the soda, and always obtained relief. This salt not only corrects the acidity in the *primæ viæ*, but likewise brings away by stool a quantity of viscid slimy matter, so acrid, as to burn and excoriate the parts as it passes out."—p. 102.

As the paroxysm is often excited by some particular kinds of food disagreeing with the stomach, attention must be given to discover these, which, of course, must be avoided.

> "The articles most likely in this country to produce night-mare, I conceive to be cucumbers, nuts, apples, and all such things as generally produce flatulence."—p. 106.

The paroxysm does not always immediately follow the eating improper food; but sometimes several days intervene; in which case its approach should be anticipated, and the carbonate of soda taken. Other alkalies may also be employed; and the following formulæ are given as the best adapted for this purpose:

" No. 1.	" No. 2.
℞ Potassæ carbonatis, gr. x.	℞ Ammon. pp. gr. x.
Tinct. cardam. comp. f ʒiij.	Tinct. capsici, f ʒj.
Syrupi simplicis, f ʒj.	Syr. croci, f ʒj.
Aquæ menth. pip. f ℥j.—M.	Aqua cinnamom, f ℥x.—M.
Fiat haustus.	Fiat haustus."

But should the bowels be much constipated, these medicines may be aided by a dose of magnesia, combined with rhubarb and carbonate of soda, on the following morning. The best prophylactic means are, besides avoiding the hurtful ingesta, temperance, both in food and sleep, and moderate exercise. Those to whom the complaint is habitual, are advised never to sleep alone; and the patient should always be roused by his attendant or companion as early as possible after the commencement of the attack; for as the disease gains strength, both in violence and frequency by habit, the necessity of breaking it is obvious. When there is much languor or debility, a state of body very favourable to the attack, steel and bitters should be administered.

We may be thought to have been rather prolix in our analysis of this little work: but if so, it has arisen from our having found both amusement and instruction in the perusal. The style, although far from being elegant, is nevertheless easy and perspicuous; and justice obliges us to say, that the arrangement might be improved.

PART III.

SELECTIONS.

Account of a Soda Lake in South America. By M. POLACIO FAXAR.

" In Maracaybo, one of the provinces of Venezuela (forty-eight miles east of Merida, about eight degrees of N. L., and seventy degrees some minutes of W. Long), is a valley, called by the natives *Lalagunilla*, the small lake. On the south of this valley, which contains an extent of country seven miles in length and five in breadth, runs that branch of the Andes which extends along the coast of Venezuela, and rising on this spot to the line of perpetual snow, forms La Sierra Nevada of Merida.

" The waters that descend northwards from La Sierra unite to form the river Chama, which traverses the neighbouring countries, Mucuchies, Merida, Exido, Lalagunilla, and Estanques, and loses itself in the woods which surround the lake of Maracaybo. Those, on the contrary, which descend southwards from the Cordilliera, are received by several rivers communicating with the Apure, which falls into the Oronoco. At a considerable height northwards, on La Sierra, is found the species of Cinchona, known in commerce by the appellation of Cinchona of Carthagena.

" The north side of Lalagunilla is bounded by a limestone hill. The land rises imperceptibly towards the east, and descends gradually several fathoms towards the west, until it reaches that tract of the country which produces the Cacao (cocos *buteracea*). The bed of the valley is formed of chalk; it is situated about 250 fathoms above the level of the sea.

" The village of Lalagunilla is situate in the south of the valley; its inhabitants, a strong laborious people, are Indians, whose only occupation is agriculture and the extraction of the *Urao*.

" Nearly in the centre of the valley is the lake which receives the rain water that descends from the neighbouring mountains; but as even during the greatest drought the lake never becomes dry, it is supposed that it has some springs which supply it with water, independent of the rains. Its dimensions in the rainy season, in the widest part, are two hundred and ten fathoms by one hundred and six. On the eastern side, where the waters are deepest, its depth never exceeds three fathoms. To prevent inundations to the neighbouring cottages, a drain is cut on the south-east side, which carries the waters into the Chama. On the eastern side the waters are very shallow, and being contracted in width, give to the lake a somewhat oval form. It is on this side that many aquatic plants are found. The air of the valley being very dry, the climate mild, the sky serene, the country in a high state of cultivation, and the view of La Sierra Nevada truly sublime, a residence here is delightful, and many families from Merida and the environs constantly pass some months of the year at Lalagunilla.

" The waters of the lake are impregnated with carbonate of soda, which crystallizes in the dry season, and is in that state by the Indians called *Urao*. The extraction of this salt, which is employed at Venezuela to prepare the Mò, or inspissated juice of tobacco, has been long known and practised at Lalagunilla. At the end of the last century, when the Court of Madrid monopolized the cultivation of tobacco, the right of extracting the Urao fell likewise to the crown. On the east side of the lake a magazine was erected for receiving the *Urao*, and another building as a residence for the *Teniente visitador*, or captain of

Gens d'armes, in whom was vested the government of the lake, with a view to prevent a species of smuggling which the Indians are much inclined to practise, by secretly withdrawing the Urao.

"The water of the lake is of a yellowish green colour, of a saponaceous quality, alkaline taste, and peculiar smell. There is no appearance of fish of any kind in these waters; the only living creature I could observe, was an insect on the borders of the lake, which appeared to me a species of spider.

"These waters having a strengthening quality, convalescents resort thither in the morning to bathe, and derive great benefit from them in some cutaneous diseases. In many disorders incident to horses they are likewise very efficacious.

"When the period for the extraction of the Urao arrives, which is every two years, those Indians of Lalagunilla who are devoted to this employment, and who are called Huragueros, are embodied at the residence of the Teniente visitador. The Indians employed at this work are easily distinguished, by their hair becoming red. Being embodied, they proceed, in the presence of the Gens d'armes, to sound the lake with a long pole, at the end of which is fixed a bar of iron, which serves to break the mineral. Having by these means found the parts where the Urao is most copiously deposited, they divide themselves into different parties (quadrillas), for the sake of facilitating their labour. Each party, composed of eight, ten, or more Indians, fixes a pole in the centre of the district allotted to them. Supported by this pole, the Huragueros plunge into the lake, and beginning by separating a bed of earth which covers the mineral, they proceed to break the Urao. When they suppose that a considerable part of the Urao is separated from the mass, they dive for it, and then rising again above the water, place it in very small canoes (piraguitas), which float round the spot. As there are several Indians which explore the same mine, the work goes on without interruption, but the same Huraguero is not able to plunge many times successively. The work, which begins early, and always in the presence of the Gens d'armes, who are stationed on the borders of the lake, ceases at six o'clock in the afternoon, when the produce of the day's labour is deposited in the royal magazine, and is afterwards exposed to the heat of the sun.

"The extraction, which lasts nearly two months, produces from 1000 to 1600 hundred weight of Urao, which is the quantity consumed in two years at Venezuela; but if more were required the lake would probably furnish upwards of four times that quantity. The difficulty of extracting the Urao may easily be imagined, but what is much worse, considerable danger attends it. If the Indian diver happen to lose his hold of the pole, or if some other accident prevent his rising promptly to the surface of the water, and indeed, the Indians of Lalagunilla are in general but indifferent divers, he is in danger of swallowing more or less of the alkaline solution. If the quantity drank be inconsiderable, the bad consequences may be trifling; but if he happen to drink largely, he cannot survive it many days. Oil has been had recourse to in vain. Acetic acid might, perhaps, in such cases be administered with better effect. Father Rendon proposed, in 1808, to the Captain-general of Caraccas, to effect the extraction of the Urao by sinking a caisson, which, when properly secured, should be opened at bottom to get at the soda. This project, which undoubtedly at low water might be realised at a small expense, was rejected as impracticable.

" When the extraction of the Urao is completed, the superintendant of the tobacco, who resides at Merida, repairs to Lalagunilla, accompanied by the Teniente visitador and others. The salt is weighed, and paid for in the proportion of about one real of plata (about seven-pence) the pound. It is then conveyed into the general storehouse for tobacco at Guanare, in the province of Caraccas, whence it is distributed to the lesser warehouses.

" If a heap of tobacco leaves covered with the green leaves of other plants be exposed to the sun for a few days, the tobacco begins to ferment. If then put into a press, a red liquor may be drawn from it, the exhalations of which are intoxicating, and its taste very pungent. This juice drawn from the tobacco is called Anvir, but when reduced to a syrup, by evaporation, it is termed Mò. If the Mò be mixed with the Urao when dried, roasted, and pulverised, it forms the Mò dulce, if the proportions be preserved by an ounce of Urao to a pound of Mò, or otherwise Chimò, if two or more ounces of Urao be mixed with a pound of Mò.

" In the province of Venezuela, and especially in Barinas and part of Caraccas and Maracaybo, Mò is much used and likewise Chimò, which is kept in small horn boxes, and occasionally persons put a little into their mouths. The Mò, and especially the Chimò, produces a copious salivation, stimulating at the same time the nervous system, which in these climes, where the senses are blunted by the excessive heat, is productive of a degree of pleasure.

" It is likewise used in medicine for spasmodic complaints, which in these countries are both frequent and dangerous. It is said, that a little Chimò held in the mouth, protects swimmers from the electric power of the cramp fish (Trembladores.)

" The sale of tobacco, the Mò dulce, and Chimò, in the

Captaincy-general of Venezuela, produced, in 1804, 700,000 piasters after every expense attending it was paid.

"I had the honour of transmitting last year to Baron Humboldt in Paris, a specimen of the Urao, which Colonel Duran brought to Europe. It was analysed by M. Gay Lussac, who pronounced it to be natron, in no respect different from that found in the lakes of Egypt and Fezzan. The mass neither contains sulphuric nor boracic acid, but a little subcarbonate of ammonia. On comparing the Urao with common subcarbonate of soda, we find that it contains more carbonic acid and less water.

"In the environs of Lalagunilla, as well as in the roads to Merida, and especially near the river Albarregas, there are some mountains which are very distinguishable among the others by their superior verdure, and by the abundance of some plants, principally the Rosa de Muerto, and precisely the same species of verdure and the same plants are found on the mountains where are the mines of rock salt at Zipaquira, and at Enemocon of Cundinamarca in New Granada. Finding these similarities, I may venture to form a conjecture, that in the environs of Lalagunilla there must likewise exist muriate of soda; and this being ascertained, it would perhaps contribute to explain the formation of natron at such a considerable height above the level of the sea, which is more than sixty leagues distant from Lalagunilla."—*Journal of Science and the Arts*, No. II.

PART IV.

FOREIGN MEDICAL SCIENCE AND LITERATURE.

PRACTICE OF MEDICINE.

I.—THE following *Observations on Consumption*, by Professor AUTHENRIETH, will afford our readers some idea of the opinions of German practitioners on this subject.

"1. A man died in his 57th year; he was fat, robust, broad shouldered, and his whole frame the very contrast to that tending to consumption; but in his early youth he had expectorated pus, and laboured under an attack of incipient scrofulous consumption. In his riper years he had drank wine freely, and at last fell a prey to grief. A scirrhus in the stomach, and another stretching along the aorta to the abdomen, put a period to his life. Both lungs, at their superior part, shewed traces of a former suppuration; the upper flap of the right one was quite hollow, and skinny, without any cellulæ æratæ, but also without any pus.

"2. A woman of 64 years, being in her youth of a somewhat rachitic disposition, and afterwards subject to repeated inflammations of the lungs, and spitting of pus, from which she recovered without any symptoms of consumption, died in the autumn of acute inflammation. The lungs were consolidated with the pleura, the left partly by threads, which by their riband-like firmness proved their earlier origin; in the cavitas pleuræ about five ounces of red tinged serum were collected. The left part of the lungs was about two-thirds condensed, but without shewing any unusual colour, and without any cellulæ æratæ; it was flesh-like, almost resembling the sides of an uterus non gravidus when transversely cut, and sinking speedily to the bottom of a vessel with water. The remaining still spongy two-thirds, as well as the right part, which crackled on being pressed, with the exception of a piece mortified by the inflammation at the back of the lower part, floated in the water; the most diseased parts only were deeply immersed. These parts of the lungs were much filled with blood, and from their ducti æratæ, on being cut, issued a yellowish frothy fluid. The membrana pituitosa of the wind pipe was only inflamed from the division downward; but a greater degree of inflammation extended deep into the lungs, which, besides the yellowish fluid just mentioned, shewed here and there lymphatic coagulations. In neither of the lungs was any pus found in the abscesses, nor were tuberculi visible. But in the mass of the left lungs, two empty receptacles were observed, each big enough to contain a large walnut; these had no perceptible connexion with the bronchiæ, and the interior of them was coated with a close serose exudation. The heart and organs of the abdomen were healthy.

"3. Another woman, 40 years of age, of a tender frame, in the fifth month of her pregnancy, was afflicted with a phthisis purulenta, which continued for three years and a half; afterwards the consumption greatly abated during one summer, and did not become sensibly worse the succeeding autumn, but she died in the winter. The body was almost exhausted of blood, and greatly emaciated. The nerves of the breast and abdomen, the heart, and the abdominal viscera appeared sound, except the stomach, in which, without any alteration of its membrane, were a number of bloody spots in the middle part, where, in her latter days, she had felt a burning sensation; the fauces were, in consequence of the last stage of consumption, full of small aphthæ; the gall bladexercise strengthens the arm, so an apt exercise of the lungs will produce all those beneficial effects. It is not mere supposition, but repeated experience in himself and others, that induces the writer to recommend this as the most efficacious preventive in cases of a tendency towards consumption.

"The breast is not sensibly enlarged by a mere upright posture, and projection of the whole thorax, though an opposite posture contracts the same; for what is gained one way in length is almost lost again in an horizontal direction; and as much as the whole breast is protruded, so much will the columna vertebralis be bent in behind. But a deep, slow, often repeated, and vigorously continued inhalation, with the arms resting upon some solid body, in a sitting posture, enlarges the chest, and with it the lungs on all sides. It is to be understood that this inhalation is not to be carried so far as to create pain, or to produce an entire debility of the breast.

"This is the only means to procure to weak lungs, in the upper part, where it is most wanted, play-room, by a stronger action of the musculi ad inspirationem inservientes upon the more immoveable upper ribs. If this exercise be frequently repeated in youth, the upper ribs will even acquire an uncommon degree of pliability, their growth increases in a striking manner with their greater, although but passive activity; and he that before had a narrow chest, with wing-like projecting shoulder-blades, will, if he is still in those years of growth after puberty, so dangerous for the origin of consumption, soon acquire a proportionably broad round chest, quite the counterpart to that form tending towards consumption. However, this exercise must be regularly and frequently repeated; and quarters and even half hours dedicated to it every day, together with other sufficient bodily exercise in the open air. Thus employed, it will surpass in efficacy every other preventive against a tendency to consumption."

CHEMISTRY AND PHARMACY.

II.—M. Kirchoff, of Petersburg, whose researches into the nature of Sugar are well known, has published the following Essay on the *Formation of the Saccharine Matter, which takes place in the Seeds of the Cerealiæ during Germination and Malting, and in the Farina of these infused in boiling water*[*].

"The explanations of this process have hitherto been unsatisfactory. Cruickshank thought he might conclude from his experiments, that seeds during germination absorb a certain quantity of oxygen which they obtain from atmospheric air; that a part of this oxygen combines with the farinaceous part of the seed, and constitutes sugar; whilst the remainder, combining with a part of the carbon of the seed, escapes in the state of carbonic acid gas. Saussure repeated these experiments, and proved that seeds, during germination, do indeed lose carbon, which is taken up by the oxygen acting upon them; but that this oxygen does not enter into combination with the farinaceous matter of the seeds; but aids solely the formation of the carbonic acid gas which is given out during germination*.

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[*] *Journal de Pharmacie, 2nde année, Juin,* p. 250.

" He does not attempt to give any explanation of the formation of the saccharine matter; for he says, " The formation of sugar, which takes place, by means of the oxygen gas, in seeds during germination, is a very remarkable phenomenon, which I am unable to explain."

" Thomson thus endeavours to explain it: " We see," says he, " by these experiments, of Saussure, that the farinaceous part is converted into sugar by losing carbon; from which loss the hydrogen and oxygen remain in a much greater proportion†."

" From this explanation we perceive, that Thomson attributes the formation of sugar to the loss of carbon, which seeds, during germination, suffer by means of the oxygen gas. But, if we consider that the farinaceous matter is not a simple substance; that it is on the contrary composed of several heterogeneous parts, which are not perhaps all proper for the formation of sugar, we inquire which of these parts it is that has lost the carbon? As the experiments of Saussure give us no answer to this question, the explanation of Thomson is unsatisfactory.

" If we place fecula and gluten separately in circumstances favourable to germination, there is no formation of sugar; and if we infuse fecula and gluten separately in warm water, there is also none formed. It results therefore from these experiments, that in the formation of sugar, which takes place during germination, or in the operation of infusing fecula in warm water, there must be some other agent in action besides oxygen.

" Although the circumstances, in the germination of seeds, and in the operation of infusing farina in warm water, be very different, I am of opinion that the formation of sugar in both cases is owing to the same cause, viz. to the reciprocal action of fecula and gluten.

" To fix my ideas on this subject, I undertook a set of experiments with fecula and gluten. The gluten which I employed had been obtained from the farina of new wheat, and cut into small pieces, quickly dried in a moderate temperature, and re-

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[*] *Scherer, Journ. de Chimie,* vol. iv. p. 81.

[†] System of Chemistry.

duced to powder. To have a pure fecula for my experiments, I used that extracted from potatoes. The first experiment I made convinced me that the fecula and gluten acted reciprocally on each other. The fecula in a short time lost its starchy consistence, and was converted into sugar. As the success of the formation of sugar by the reciprocal action of fecula and gluten depends a great deal on the temperature; and as in operating upon small quantities, we often fail in the desired degree, the experiment does not always succeed.

" I employed the following method several times with success: upon two parts of fecula I poured about four parts of cold water; then continually stirring the mixture, added twenty parts of boiling water: it formed a thick starch, with which, while it was still warm, I mixed one part of powdered gluten, and exposed the mixture for eight or ten hours to a temperature of from 40° to 60° Reaum. In the course of an hour or two, the starch began to liquify by degrees, so that in eight or ten hours, and even in a shorter space of time, it passed through a paper filter. This filtered liquor, freed from its residue, is limpid as water; it contains a little acid, which remains in it even when it has been concentrated by ebullition to the consistence of syrup.

" This syrup tastes as saccharine as that procured from malt; it has less of an *after-taste* than the latter, and is of a very faint yellow colour. By the addition of yeast (levain acide) it is susceptible of entering into the vinous fermentation. It is only partly soluble in alcohol; and the portion dissolved by it crystallizes after the evaporation of the fluid; the crystals are white, very small, and indistinct.

" The residue, insoluble in alcohol, dissolves almost entirely in water. The infusion of galls does not form any precipitate in this aqueous solution. This residue appears to be fecula modified, which is not yet completely changed to sugar.

" The quantity of syrup obtained is in proportion with the quantity of fecula employed. It appears that in this operation very little gluten is dissolved; for we find almost the whole employed on the filter. During its digestion with the fecula, it takes an acid character: probably it is by this that it modifies the nature of fecula, and determines the formation of sugar. It is, however, remarkable, that if we add a few drops of concentrated sulphuric acid to the fecula before mixing it with the gluten, the formation of sugar does not takes place.

" When I tried whether the gluten remaining on the filter could convert into sugar a new portion of starch, I found that its action was feeble and imperfect. These experiments convinced me that when farina is infused in warm water, it is the action of the gluten upon the fecula which determines the formation of sugar.

"I wished to ascertain by experiment, if, as analogy led me to expect, the same thing took place during the germination of the farinaceous seeds. With this intention I made experiments with barley-malt dried in the air. The following are those which have given me the most satisfactory results.

"Upon one part of malting barley powdered, and two parts of fecula, I poured four parts of lukewarm water (130° Reaum.); then, continually stirring the mixture, I added fourteen parts of boiling water; and, having covered the vessel, left it to itself for an hour in a warm place. At the expiration of this time the starch was converted into a saccharine liquor, which, after being filtered and concentrated by evaporation, formed a syrup.

"This experiment seemed to me to prove that the property possessed by gluten of converting fecula into starch is much increased by germination, and that the gluten of barley is capable of converting into sugar an additional portion of fecula besides that contained in the barley.

"I deprived the powdered barley of its fecula by washing, and digested a hundred parts of it for four-and-twenty hours in three parts of a solution of potass.[*] At the expiration of this time, I poured off the yellow liquor and washed the fecula with water, until it no longer shewed the smallest trace of potass. The fecula, treated in this manner, had lost the property of forming sugar; for after having been infused in warm water it had not lost its properties as fecula, and with boiling water formed a good starch.

"The solution of potass had taken up the gluten, which renders it soluble and aids its conversion into sugar. The acids precipitate the gluten from the solution of potass. This experiment proves that Thomson mistakes in affirming that the fecula of the malting seed undergoes a modification. It consequently follows, that it is the gluten which determines the formation of the sugar in farinaceous seeds when germinating, and that the change undergone by germinating seeds depends upon a modification of their gluten. During germination, the gluten converts into saccharine matter the fecula previously insoluble, according as the young plant has need of nourishment during its evolution.

"The experiments I have just described, confirm the principle admitted in chemistry, that sugar is the substance susceptible of the vinous fermentation; for, when we infuse farinaceous seeds or the farina obtained from them in warm water, the fecula is converted into sugar by the action of the gluten. If a little attention be paid to the result of my experiments, it will easily be perceived why fecula and flour, that do not contain gluten, are not susceptible of presenting very clear phenomena of a vinous fermentation, when infused in warm water with an addition of yeast. This also explains why vegetable substances, such as, for example, potatoes, which contain fecula, but no gluten, are incapable of being advantageously subjected to the vinous fermentation, until substances containing gluten, such as farina or malt, be added. We can easily conceive how the addition of these substances favours the vinous fermentation. It is the gluten of the malt which disposes the fecula of the potatoes, infused in warm water, to change into sugar. Again, it is the gluten of the malt added to farina which determines the conversion into sugar of the fecula of the farina, more quickly, and perhaps more completely, than the gluten contained in the farina itself could have done.

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[*] Gehlen, *Journal de Chimie*, vol. i. p. 668.

"It has also been for a long time remarked, that it is advantageous to add malt to the farina obtained from grain, which we wish to undergo the vinous fermentation.

"It has been asserted, that malt employed alone does not give more spirit than an equal quantity of a mixture of malt and farina. It appears to me that a given weight of a mixture of malt and farina ought to produce more alcohol than the same weight of malt, provided, however, that the proportions of the mixture be well chosen; for in this case the conversion into sugar of the fecula of the farina is determined in part by the gluten of the farina itself, in part by the gluten of the malt.

"Proust found 0·57 to 0·58 of fecula in farina obtained from barley, all the grains of which had completely germinated. He supposes that this fecula takes no part in the vinous fermentation. At the time when Proust made this experiment, the sugar of fecula was not yet known. But Hermbstædt has very recently advanced, that the fecula found in a mixture undergoing vinous fermentation is only accidental, and that it renders the beer thick*. According to this chemist, fecula dissolved in an infusion of malt may be discovered by adding an infusion of gall-nuts; a precipitate is formed which may be re-dissolved at a temperature of 60° Reaum. But as this did not accord with my view of the subject, I made the following experiment to clear up my doubts. I prepared an infusion, with one part of malt and two of fecula. Into a hundred parts of this filtered, I poured a sufficient quantity of infusion of gall-nuts. I expected, at least, to obtain, as a precipitate, the fecula employed as such, and that contained in the malt; but the weight of the precipitate, when dried, was found to be only two parts for the hundred of malt and fecula employed. This assertion then of Hermbstædt and some other chemists is not to be depended upon. The astringent principle does not form any permanent union with the sugar of fecula; the small quantity of precipitate which I obtained is probably only gluten modified by germination, and which, by reason of this modification, dissolves at a lower temperature.

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* Hermbstædt, *Principes Chimiques pour l'art du Brasseur.*

"Although fecula be the most abundant constituent in the farina of the cerealia; and although the quantity of spirit which different kinds of farina produce, be in proportion with the quantity of fecula they contain, it was impossible, before the discovery of the sugar of starch, to determine with any certainty, if fecula concurs in the formation of alcohol, and the difficulty was increased, as this substance could never be made to undergo the vinous fermentation when treated by itself. As soon as it was known that fecula is capable of being converted into sugar by the action of an acid, it was conceived it could not remain inert in the fermenting mixture. The experiment I have just related proves that fecula may equally be converted into sugar by the action of gluten. We may then admit that it is fecula which chiefly furnishes the constituent parts of alcohol during fermentation, and is the principal base of beer and vinegar, (obtained from the cerealia).

CONCLUSIONS.

"1. It is gluten which causes the formation of sugar in germinating seeds, and in farina infused in warm water.

"2. Fecula has not undergone any change in germinating seeds; and it is only at a temperature above 40° Reaum. that gluten converts it into sugar.

"3. Fecula is the constituent part of farina, which serves principally in forming alcohol.

"4. Gluten, by germination, acquires the property of converting into sugar a larger portion of fecula than is contained in the seed.

"5. The formation of sugar in seeds which are germinating is a chemical process, and not a result of vegetation*.

"6. Fecula is found in the decoction of malt, in the state of sugar; and in this state the infusion of gall-nuts does not act upon it."

III.—The following account of a particular acid extracted from stick lac (laque en bâton), by Professor *John*, has been published in Schweigger's Journal†:

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* Although we accord with the opinion of M. Kirchoff, as far as the affinity of gluten or fecula is concerned, yet we must affirm that vegetation is the remote cause, as a dead seed will not form sugar, although supplied with heat and moisture.

† Vide vol. xv. p. 110.

"After having pulverized the lac, it is to be washed with water, until it ceases to communicate any colour. The washings are then to be evaporated, and the residue treated with alcohol. The alcoholic solution, evaporated to dryness, leaves another residue, which is to be treated with ether; and the syrupy mass, of a bright wine-yellow colour, which this leaves, being dissolved in alcohol, lets fall a quantity of resin on the addition of water. The supernatant fluid contains the new acid combined with a small portion of potass, and some traces of lime; but it may be separated, by pouring on it a solution of acetate of lead, and decomposing the precipitate by sulphuric acid, in a quantity merely sufficient for saturating the lead.

"This acid possesses the following properties:—It is crystallizable; has a very bright wine-yellow colour; an acid taste; and is soluble in water, alcohol, and ether.

"It throws down white precipitates from the solutions of the salts of lead and of mercury: but is not rendered turbid by lime-water, or the nitrates of silver and of barytes.

"Either alone, or in a state of combination, it yields a white precipitate with oxidized salts of iron.

"Its combinations with lime, soda, and potass, the crystalline form of which the author has not been able to determine, are deliquescent, and dissolve in alcohol."

BOTANY.

IV.—M. *du Petit Thouars* has communicated to the *Academie Royale des Sciences* the following curious observations relative to the effects which some frosts, in the last spring, produced upon different trees:

The author had already remarked, in March 1813, that the opened flowers of stone-fruit trees, particularly of the apricot, did not suffer, although they were exposed to a frost of four or five degrees below zero (centigrade), and which formed a small flake of ice in the space which exists at the bottom of the calyx. This year, in many of the mornings of the month of April, the same botanist found, in cutting some young shoots, that a cylinder of ice was formed between the bark and the wood, and consequently in the space occupied by the *cambium*. The same circumstance was also found in the flower gems of the pear, although the time of their blowing was yet distant; and flakes of ice were perceived in the substance even of the leaves of the Iris and other monocotyledons. In those of the box, they formed an inflation upon the lower disk: but although this phenomenon was renewed to a greater or less extent for eight days successively, yet, it did not appear that any of the plants suffered*.

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* *Annales de Chimie et de Physique,* tome i. p. 433.

PART V.

MEDICAL AND PHYSICAL INTELLIGENCE.

Prof. **Brande's** Lectures will be resumed on his return to town.

I.—SOCIETIES.

Royal Society. — On Thursday, May 23, a paper by Sir Everard Home, on the Formation of Fat in the Tadpoles and Frogs, was read. An anatomical description of the tadpole of the rana paradoxica was given, and likewise a set of chemical observations on the eggs of birds and the spawn of frogs, by Mr. Hatchett. The yolk of birds' eggs is a mixture of albumen and a buteraceous oil. But the spawn of the frog contains no oil whatever. Hence Sir E. concludes, the necessity of tadpoles to form a quantity of fat before they can complete their change into a frog. And as the intestines of the tadpoles are longer than those of any other animal, Sir E. considers it as evident that this fat is formed by the intestines.—On Thursday, May 30, a paper, on the Application of Galvanism to the cure of certain Nervous Diseases, by Dr. Wilson Philip, was read. The author, in the papers already submitted to the Society, conceives that he has shown a radical difference between the nervous and the sensorial energies. Galvanism, if it be not the very same with the former, may be substituted for it, and acts in the same way. He thinks, therefore, that galvanism can be applied successfully only to disorders of the nervous system; though it may at times, perhaps in consequence of the intimate connexion between the sensorial and nervous systems, successfully excite the former to activity. Asthma appears to be entirely a disease of the nerves, for the lungs, even in obstinate chronic cases, are not in the least injured. He therefore thought of applying galvanism as a cure of that disease, and found it of material benefit in all the cases tried. It was had recourse to in eighteen cases in the Worcester Infirmary, and in four cases of private practice. In every one of them immediate benefit was experienced; in most of them it afforded greater relief than any preceding medicine tried; and in two of the cases it produced a complete cure. The method was to apply a piece of tin foil to the nape of the neck, and another to the pit of the stomach. The wires from the two ends of a galvanic battery were connected with these, and the galvanism was continued for about ten minutes. At first it was very weak, being confined to three or four pairs of plates of four inches square, excited by water mixed with $\frac{1}{20}$th of its weight of muriatic acid; but was gradually increased till it consisted of 20 or 25 pairs of plates, by removing one of the wires along the battery.—On Thursday, June 13, a paper, by Thomas Andrew Knight, Esq. on the detached Leaves of Vegetables, was read. Mr. Knight was of opinion that liquids similar to the true sap pass down through the footstalks of the leaves of plants, and supply all the nourishment by which vegetables are supported. He planted single leaves of the potatoe in garden pots, and watered them regularly. In this situation they lived till winter, and the bottom of the leaf had swelled out to a matter similar in its nature to the potatoe tuber. Leaves of mint treated in this way likewise lived all winter, and sent out numerous roots. Branches of the vine about a yard long were placed so that their full grown leaves dipped partly into a basin of water each. In this position the branches lived for a month; the small leaves increased in size, and the small twigs continued to elongate. —At the same meeting a paper by Dr. Holland was read, on the Manufacture of Sulphate of Magnesia at Monte de la Guardia, about eight miles north from Genoa. The mountains in that district consist of primitive slate, with subordinate beds of serpentine and limestone. The serpentine contains veins of pyrites, both copper and iron, and the manufacture was first established to obtain blue and green vitriol. The pyrites is roasted for about a week. It is then exposed to the air for some months, during which period it is occasionally watered. It falls down in small fragments, and minute crystals of sulphate of magnesia form on its surface. It is lixiviated with water, and the liquid filtered. It contains sulphates of magnesia, of iron, and of copper. The metals are precipitated by means of the magnesian lime-stone which abounds in that country. It is supposed that the magnesia contained in the lime-stone may somewhat increase the product of sulphate of magnesia.—On Thursday, June 20, a paper by Dr. Brewster was read, on the Optical Structure of the Lens of the Eyes of Fishes. Dr. Brewster subjected the lens of a cod fish to examination in a glass parallelopiped surrounded with Canada balsam, and described the optical phenomena which presented themselves. From these phenomena he draws as a conclusion that the central nucleus of the lens is in a state of compression, and the external coats are in a state of dilatation, in consequence of which they both polarize light like crystallized bodies; while the coats between the central nucleus and the external coats do not polarize light at all. He conceives that the object of this structure is to correct the effect of spherical aberration.---At the same meeting a paper by Sir Everard Home was read, containing a further Account of the Fossil Skeleton found near Lyme. Having again examined some remains of the same fossil animal, he has ascertained that the animal was a fish, but seemingly of a genus very different from any which exists at present.

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ROYAL ACADEMY OF SCIENCES OF PARIS.—In May last *M. M. Hallé* and *Pinel* reported a Memoir of *M. Chambon's*, in which he proposes to establish that the Gout is contagious.

THE PHYSICO-MEDICAL SOCIETY of the University of ERLANGEN has conferred, in a very flattering manner, its diploma on Dr. JENNER, Sir HUMPHREY DAVY, Professor BRANDE, and Dr. BURROWS.

II.—PRIZE QUESTION.

Prize proposed by the Royal Medical Society of Edinburgh.—"What are the chemical changes produced in the air by the growth of plants; and do they on the whole purify or deteriorate the atmosphere?" A set of books, or a medal of five guineas value, shall be given annually to the author of the best dissertation on an experimental subject proposed by the Society; for which all the Members, honorary, extraordinary, and ordinary, shall alone be invited as candidates. The dissertations are to be written in English, French, or Latin, and to be delivered to the Secretary on or before the 1st of December of the succeeding year; and the adjudication of the prize shall take place in the last week of February following. To each dissertation shall be prefixed a motto; to be written also on the outside of a sealed packet, containing the name and address of the author. No dissertation will be received with the author's name affixed; and all dissertations, except the successful one, will be returned, if desired, with the sealed packet unopened.

III.—MEDICAL.

Poisoning by Oxymuriate of Mercury.—M. *Pechier* of Geneva has ascertained, that it requires an ounce of white of egg to neutralize four grains of corrosive sublimate taken as a poison. He has besides discovered that this albuminated mercury, when precipitated, is completely soluble in all the alkaline solutions, either pure or carbonated, and, also, the earthy alkaline solutions.

The *Moxa*, a remedy so much in use in China and in parts of India, and which is undoubtedly of very ancient origin, is rapidly acquiring the confidence of the French practitioners. In addition to the evidence of M.M. *Pouteau*, *Pascal*, and *Valentin*, M. *Cazes*, a surgeon of *Belmont*, has published several proofs of its successful application in cases of scirrhous liver, in which no other known remedy would, probably, have had any good effect.

Cinchona Bark.—The opinions of authors have very widely differed regarding the best species of this bark. The following is the substance of that of M. *Hurtado*, a Spanish physician, who has lately published an Essay on Intermittent and Remittent Fevers*.

The best cinchona is that of Loxa, a brown species, the bark of the cinchona *condaminea* of Humboldt and Bonpland. "It is distinguished chemically by its infusion decomposing tartar emetic, animal gelatin, gall-nuts, and sulphate of iron, independently of some other characters which are not found in the same degree in the other known species, and which are confirmed by the proportions and colours of the precipitates obtained." The best bark of this description is procured in the woods of Utizinga, Enatizinga, and Caxanuma. The second is the Kalysaya, or orange cinchona, the bark of the cinchona *lancifolia* of Mutis, the yellow bark of commerce; and when collected, dried, and preserved with care, is as valuable a febrifuge as the former kind. "It however," says Hurtado, "sometimes attacks the head, and occasions gripings;" but it produces excellent effects when mixed with the former species. The third kind is the cinchona commonly called huanuco, the bark of the C. *oblongifolia* of Mutis, the red bark of the shops. The Spanish physicians have very little esteem for this bark.

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* *Annales Cliniques de Montpellier, tom.* xxxix. p. 323.

M. Hurtado assents with the opinion of the majority of authors, that cinchona is most efficacious when administered in the form of fine powder; and next to that he recommends an infusion obtained by the simple maceration of the bark in warm water.

M. Laubert has extracted from cinchona bark, by means of sulphuric ether, a greenish substance, which possesses many of the characteristics of bird-lime, and an essential oil of a very peculiar nature. In the superior kinds of cinchona this oil has the aroma of benzoin; in the common kinds, the colour is less agreeable, and the oily substance appears more allied to the resins than the volatile oils.

III.—GALVANISM.

M. Sarrazin, a surgeon of Bellengin, has laid before the Royal Academy of Sciences of France the details of some experiments on this species of electricity. He asserts, that by placing upon each other any number of magnetic bars, piles are formed which produce effects analogous to those of the ordinary galvanic piles. The Academy has appointed a commission to examine into the subject.

IV.—MISCELLANEOUS.

A Bill for Regulating the Practice of SURGERY *throughout the United Kingdom of Great Britain and Ireland.*

(Intended to be introduced in the next Session).

WHEREAS ignorant and incapable persons are not restrained by law from practising Surgery, whereby the health of great numbers of persons is much injured, and the lives of many destroyed;

May it therefore please Your MAJESTY,

That it may be enacted; and be it enacted by the KING'S Most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the Authority of the same, That from and after it shall not be lawful for any person to practise Surgery, for lucre or profit, unless he shall have been personally examined, as to his qualification and fitness thereto, by the Royal College of Surgeons in *London*, or by the Royal College of Surgeons in *Edinburgh*, or by the Royal College of Surgeons in *Ireland*; and unless he shall have received a Diploma or Testimonial of his knowledge and ability to practise Surgery, under the seal of the Royal College, before whom such examination shall have been made; for which Diploma or Testimonial the usual fee, and no more, shall be demanded and received.

And be it further enacted, that every person who shall have been so examined, and shall have received such Diploma or Testimonial under the seal of either of the said Royal Colleges, shall be entitled and shall have the right to practise Surgery in any and every part of His Majesty's Dominions, any law or custom to the contrary notwithstanding.

Provided always, and be it further enacted, That all and every person or persons who shall have been duly examined, and shall have obtained a Testimonial or Qualification as a principal Surgeon in His Majesty's Army or Navy, and who shall have actually served in that capacity, shall be entitled to practise Surgery in any and every part of His Majesty's Dominions.

And whereas by a certain statute of the Parliament of *Ireland*, passed in the Thirty-sixth year of the reign of His present Majesty, intituled, "an Act for the further Regulation of Public Infirmaries or Hospitals," it is enacted, That from and after the passing of that Act, no person should be capable of being elected Surgeon to a County Infirmary or Hospital, who should not previously have obtained Letters testimonial of his qualification under the seal of the Royal College of Surgeons in *Ireland*; and that no other qualification or examination should be necessary to make any person capable of being elected Surgeon to such Infirmary or Hospital: and whereas by another Act, passed in the Fifty-fourth year of the reign of His present Majesty, intituled, "an Act to amend several Acts for erecting or establishing public Infirmaries or Hospitals in *Ireland*, so far as relates to the Surgeons or Apothecaries of such Infirmaries or Hospitals," it is provided, that Letters Testimonial of the College of Surgeons in *Ireland* shall be laid before the Grand Juries in the said Act mentioned, previous to the requiring or making any presentment of any sum of money to be Surgeon of any Infirmary or Hospital by such Grand Juries: and whereas it is just and expedient that the provisions of the said Acts should be extended to the Members of the Royal College of Surgeons in *London* and in *Edinburgh*; Be it therefore enacted, that the Members of the Royal College of Surgeons in *London*, and of the Royal College of Surgeons in *Edinburgh*, shall be eligible to all the offices and appointments mentioned in the first-recited Act, and shall be entitled to all benefits and advantages given and intended by the second-recited Act, on the production of the Diplomas or Testimonials under the seal of their respective Royal Colleges, in the same manner as the Members of the Royal College of Surgeons in *Ireland* have been since the passing of the said recited Acts.

And whereas Surgical aid is frequently required in Midwifery, and it is expedient that male persons so practising should be qualified to render such aid; Be it therefore enacted, that from and after it shall not be lawful for any male person to practise Midwifery, unless he shall have obtained a Diploma or Testimonial of his knowledge and ability to practise Surgery, under the seal of one of the said three Royal Colleges; or unless he shall have obtained a Testimonial of qualification as a principal Surgeon in the Army or Navy, and shall have actually served in that capacity.

Provided always, and be it further enacted, That nothing in this Act contained shall be deemed or taken to extend to any person resident in *Great Britain* or *Ireland*, and actually practising Surgery or Midwifery at the time of the passing of this Act; but that every such person may continue to practise Surgery or Midwifery respectively, so far as any such person lawfully might have done if this Act had not been passed.

A METEOROLOGICAL TABLE,

From the 21st of June to the 20th of July, 1816,

KEPT AT RICHMOND, YORKSHIRE.

230 Miles NW from London.

D.	Barometer. Max.	Barometer. Min.	Therm. Max	Therm. Min.	Rain Gage.	Winds.	Weather.
21	29 77	29 75	74	46		Vble.NE.	1 Sun... 3 Cloudy..
22	29 66	29 53	77	47		NE.SE.	1 Sun.. 2 Cy.. 3 Sun.
23	29 49	29 37	58	48	48	SE.N.	1 Rain.... 4 Cloudy....
24	29 75	29 73	67	43		N.	1 Cloudy.. 2 Sun...
25	29 63	29 52	72	51		N.	1 Sun.... 3 Cloudy..
26	29 44	29 39	75	46		N.E.	1 3 4 Cloudy... 2 Sun..
27	29 70	29 68	67	41		NNE..	1 Cloudy... 2 Sun...
28	29 76	29 72	69	45		NNE..	1 Sun....
29	29 64	29 49	76	50	04	NE.SE.	1 Sun.. 2 Sh. 4 Starl..
30	29 43	29 38	73	48	09	S.SW.	1 Sun.. 2 Showers.
1	29 42	29 40	66	46	01	Vble.ENE.	1 Rain. 2 Cloudy..
2	29 43	29 41	72	49		S.SSE.	1 Sun.. 3 Cloudy..
3	29 48	29 44	70	43		SW..	1 3 Sun.. 2 Cy.. 4 Mns..
4	29 40	29 40	68	41	04	WSW.	1 3 Sun.. 2 Sh. 4 Moon
5	29 51	29 49	70	44		WNW.ENE.	1 Sun...
6	29 44	29 35	68	51	22	SE.	1 Mist... 2 Rain..
7	29 33	29 32	68	52	76	SE.E.	1 Rain....
8	29 32	29 32	70	48	30	SE.E.	1 R... 2 S.. 3 Sh. 4 Mn..
9	29 32	29 26	71	42	17	E.	1 R.. 2 S.. 3 Th. Li.&R. 4Ms..
10	29 24	29 22	70	44	04	SE. Vble.	1 Mist... 2 S... 3 Th. &R. 4Ms..
11	29 30	29 30	64	44		W.WbN..	1 Sun..
12	29 44	29 40	66	48		WbN..	1 3 S.. 2 S & Sh. 4 Stl..
13	29 55	29 52	66	42		W..	1 3 S... 2 S. & Sh. 4 Stl...
14	29 30	29 24	68	46	69	SW..SE.	1 Sun... 2 R.... 4 Starl..
15	29 33	29 33	72	42	05	SW.SE.WbN..	1 Sun.. 3 Rain. 4 Starl..
16	29 33	29 27	70	46		Vble.	1 Sun.. 3 Rain. 4 Starl...
17	29 04	28 87	74	46	26	ENE.ESE..	1 Sun.. 3 Th. & Rain..
18	29 03	28 96	63	48	06	SE...S...	1 Showers. & Sun.
19	29 19	29 10	63	52	10	SE..	1 3 Sun.. 24 Rain..
20	29 31	29 18	75	59	23	SE.S..E.	1 3 R. 2 S.. 4 Th... Li....& R..

THE quantity of rain during the month of June was 1 inch 22-100ths.

Observations on Diseases at Richmond.

The period has been very healthy. A few cases of the following diseases have been under treatment: Ascites, Cynanche Tonsillaris, Diarrhœa, Febris Catarrhalis, Febris Simplex, Gastrodynia, Hepatitis, Ischuria, Menorrhagia, Obstipatio, Ophthalmia, Paralysis, and Phthisis.

METEOROLOGICAL TABLE FOR LONDON,

From the 20th of JUNE, to the 19*th of JULY,* 1816,

By Messrs. HARRIS & Co.

Mathematical Instrument Makers, 50, High Holborn.

M.	D.	Therm.			Barom.		Rain Guage	De Luc's Hygrom. *Dry.*		*Damp.*		Winds.		Atmo. Variation.		
	20	53	67	56	30	30^1				0	0	S	SE	Fine	—	—
◐	21	61	68	53	30^1	30^1		0	0	1	2	SE	SE	Fine	—	—
	22	57	67	54	30^1	30			0	3	3	ESE	ESE	Clo.	—	—
	23	58	64	53	29^9	29^8				4	6	SW	S	Fine	Rain	Fine
	24	55	61	51	29^8	29^9	42			2	1	W	NW	Fine	—	—
	25	55	69	50	29^8	29^9				1	0	N	NE	Fine	—	—
	26	56	62	51	29^9	29^7			0	5	7	NE	ENE	Fine	Fine	Rain
	27	54	60	53	29^5	29^8	40			7	5	NE	NNE	Rain	—	Fine
	28	57	61	50	29^2	30^1	58			4	3	NE	N	Fine	—	—
○	29	55	72	55	30	29^9				5	4	E	S	Fine	—	—
	30	65	68	52	29^5	29^7			0	3	0	S	SSW	Fine	—	—
	1	55	61	54	29^6	29^7				2	3	WNW	E	Rain	Fine	—
	2	68	67	54	29^8	29^8	14			2	3	SW	SE	Fine	—	Rain
	3	58	60	50	29^8	29^8	16			2	5	W	W	Clo.	—	—
	4	58	61	50	29^8	29^6	11			3	2	SW	SW	Clo.	Rain	Clo.
	5	55	60	51	29^6	29^8	36			4	2	W	SW	Rain	Fine	—
◑	6	58	65	50	29^8	29^8	02			3	4	SW	SSW	Fine	Clo.	Fine
	7	57	63	53	29^7	29^6				5	6	S	S	Rain	—	Fine
	8	60	66	50	29^6	29^6	40			6	6	S	SSE	Fine	—	—
	9	58	58	50	29^6	29^6				5	6	S	S	Fine	Rain	Clo.
	10	60	63	51	29^6	29^5	75			5	5	SSW	WSW	Fine	—	—
	11	58	65	55	29^5	29^6				5	4	W	W	Fine	—	—
	12	57	69	50	29^7	29^8				5	2	W	W	Fine	Rain	—
	13	55	70	54	29^8	29^9	47			4	3	WSW	W	Clo.	—	—
	14	60	59	55	29^8	29^6				3	7	W	WSW	Clo.	Rain	—
●	15	57	58	53	29^5	29^6	09			10	6	SW	SW	Rain	—	Fine
	16	55	59	52	29^6	29^5	04			6	6	ENE	SSW	Rain	—	—
	17	57	60	50	29^5	29^5				6	6	W	SW	Fine	Rain	Fine
	18	55	59	50	29^4	29^5	04			5	7	S	S	Fine	Clo.	Fine
	19	54	61	59	29^4	29^5	01			8	11	S	S	Rain	—	Fine

The quantity of Rain during the month of June, is 1 inch 85-100ths.

BILL OF MORTALITY *from June* 18, *to July* 16, 1816.

		June 25.	*July* 2.	*July* 9.	*July* 16.	
CHRISTENED.	Males	257	249	256	238	
	Females	211	226	265	230	
		468	475	521	468	Total, 1952.
BURIED	Males	208	201	186	176	
	Females	179	202	190	189	
		387	403	376	365	Total, 1551.
OF WHOM HAVE DIED	Under 2 Years.	109	97	101	101	
	Betw. 2 and 5	29	45	39	30	
	5 and 10	18	18	20	17	
	10 and 20	15	13	13	13	
	20 and 30	24	30	17	36	
	30 and 40	40	37	42	38	
	40 and 50	49	38	50	42	
	50 and 60	40	38	28	27	
	60 and 70	32	34	24	26	
	70 and 80	23	31	22	21	
	80 and 90	15	18	18.	13	
	90 and 100	3	4	3	2	
SMALL POX		6	8	8	14	Total 36.

A REGISTER OF DISEASES

Between JUNE 20th, and JULY 19th, 1816.

DISEASES.	Total.	Fatal.	DISEASES.	Total.	Fatal.
Abortio	17		Epilepsia	4	
Abscessio	12		Epistaxis	8	
Acne	6		Erysipelas	27	
Amaurosis	1		Erythema *læve*	4	
Amenorrhœa	22		——— *nodosum*	1	
Amentia	2		Febris *intermittent*	19	
Anasarca	18	1	—— *catarrhalis*	23	
Aneurisma	1		—— *Synocha*	25	
Angina Pectoris	1		—— *Typhus mitior*	7	1
Anorexia	8		—— *Typhus gravior*	1	
Aphtha *lactentium*	9		—— *Synochus*	9	
—— *anginosa*	1		—— *remit. Infant*	20	
Apoplexia	7	2	Furunculus	4	
Ascites	5		Gastritis	1	
Asthenia	37		Gastrodynia	20	
Asthma	42	2	Gonorrhœa	16	
Asphyxia	1		Hæmatemesis	6	
Atrophia	5		Hæmaturia	1	
Bronchitis *acuta*	2		Hæmoptöe	20	1
——— *chronica*	10		Hæmorrhois	21	
Calculus	2		Hemiplegia	6	1
Cancer	4	1	Hepatalgia	5	
Carbunculus	2		Hepatitis	16	
Cardialgia	10		Hernia	5	1
Carditis	4	1	Herpes *Zoster*	3	
Catarrhus	92		——— *circinatus*	1	
Cephalalgia	29		——— *labialis*	3	
Cephalæa	6		Hydrocele	1	1
Chlorosis	11		Hydrocephalus	4	2
Chorea	2		Hypochondriasis	12	
Cholera	16		Hysteralgia	4	
Colica	20		Hysteria	13	
—— *Pictonum*	3		Hysteritis	1	
Convulsio	10		Icterus	16	1
Cynanche *Tonsillaris*	49		Ileus	1	1
——— *maligna*	6		Impetigo *sparsa*	2	
——— *Trachealis*	4		——— *erysipelatodes*	1	
——— *Parotidea*	9		——— *scabida*	1	
——— *Pharyngea*	1		Ischuria	3	
Delirium Tremens	1		Lepra	4	
Diarrhœa	48	1	—— *syphilitica*	1	
Dysenteria	13		Leucorrhœa	21	
Dyspepsia	101		Lichen *simplex*	2	
Dyspnœa	14		Lithiasis	3	
Dystocia	1		Lumbago	4	
Dysuria	6		Mania	9	1
Ecthyma	7		Melancholia	6	
Eczema	4		Menorrhagia	20	
Enteritis	10	1	Morbi *Infantiles**	93	5
Entrodynia	28		——— *Biliosi**	85	

DISEASES.	Total.	Fatal.	DISEASES.	Total.	Fatal.
Nephralgia........................	7		Pyrosis........................	5	
Nephritis........................	2		Rachitis........................	1	
Neuralgia........................	11		Rheumatismus *acutus*......	40	
Obstipatio........................	39		——— *chronicus*...	52	
Odontalgia........................	8		Roseola........................	7	
Ophthalmia........................	34		Rubeola........................	56	2
Otalgia........................	1		Scabies........................	61	
Palpitatio........................	8		Scarlatina *simplex*..........	12	
Paralysis........................	10		——— *anginosa*.........	3	
Paronychia........................	4		Scirrhus........................	2	
Pemphigus........................	1		Scorbutus........................	7	
Peripneumonia........................	3		Scrofula........................	23	
Peritonitis........................	6		Spasmi........................	17	
Pernio........................	1		Splenitis........................	1	
Pertussis........................	22		Strictura........................	5	
Phlegmasia *dolens*...........	2		Strophulus *intertinctus*...	6	
Phlogosis........................	11		Sycosis *menti*..............	1	
Phrenitis........................	1	1	Syncope........................	2	
Phthisis *Pulmonalis*.........	34	17	Syphilis........................	30	
Physconia........................	1	1	Tabes Mesenterica.........	7	1
Plethora........................	7		Tympanites........................	2	
Pleuritis........................	12		Vaccinia........................	49	
Pleurodyne........................	8		Varicella........................	12	
Pneumonia........................	24	4	Variola........................	20	
Podagra........................	14	1	Vermes........................	31	
Porrigo *larvalis*.............	5		Vertigo........................	31	
——— *favosa*...............	2		Urticaria *febrilis*...........	17	
Prurigo *mitis*.................	2		——— *evanida*.........	2	
——— *senilis*................	3				
Psoriasis *guttata*............	2		Total of Cases	2086	
——— *inveterata*...........	3				
Purpura *simplex*.............	2		Total of Deaths..................		51

* *Morbi Infantiles* is meant to comprise those Disorders principally arising from dentition or indigestion, and which may be too trivial to enter under any distinct heads; *Morbi Billosi*, such Complaints as are popularly termed *billious*, but cannot be accurately classed.

Observations on Prevailing Diseases.

Notwithstanding the continued unseasonableness of the weather, occasioning so unusual a degree of cold and moisture, yet this period has been singularly healthy; and presents little worthy of comment.

Rubeola is still prevalent, and, among the lower classes of society, exceedingly fatal; but *Variola* is less frequent, and is of a milder form. *Pertussis* is on the decline.

A case of *Purpura simplex* occurred in an infant three years old, who, without any known cause, became covered with purple spots to the amount of a thousand and more. They first appeared on the breast, then spread over the face, body, and extremities. Two purple patches, the size of a shilling each, on the prominent part of the shoulders were produced by the pressure of the mother's fingers in adjusting its clothes. The muscular flesh was flabby, and the debility so great, that the child lost the power of walking. The bowels were open, skin cool, tongue moist, and of a dark-red colour, and the appetite was deficient. The only medicine given was infusum rosæ; the diet was arrow root, or sago, with wine, a small quantity of porter, and oranges. In a few days the purple spots assumed a red colour, and gradually disappeared; the strength daily increased, and in a fortnight the patient was perfectly restored.—Is not this disease analogous to scurvy?—all the symptoms being present, excepting the sponginess of the gums.

A case of constipation, placed under the head of *Ileus,* occurred in a woman about sixty years of age, who had for nine or ten months been labouring under constipated bowels, accompanied by very frequent vomiting of a fluid in colour and smell very much resembling fæces. She complained of a dull pain, and a sense of tightness across the epigastrium; but there were no other symptoms of any acute affection of the intestinal canal. The constipation was frequently so great, that a month or five weeks would often pass without her having any discharge per anum, and then but a very small quantity only of hardened fæces was passed.—For about a fortnight before her death the vomiting was almost incessant, and the powers of life were gradually worn out.

Examinationes post mortem.—1. Upon examining the contents of the abdomen of the subject of *Ileus,* twenty-four hours after death, the peritoneum, or rather the cellular membrane immediately under the peritoneum, lining the cavity and covering the intestines, was found studded here and there with firm, white, and flattened tubercles, varying in size from that of a millet-seed to that of a large pea, which on the mesentery were much more numerous. But the chief morbid change was observed in the transverse colon, which, together with the mesocolon and omentum, had formed a diseased mass of a blueish colour externally, but internally of the same texture and colour as the tubercle before mentioned. The transverse colon was so much diseased that its canal was almost obliterated, barely admitting the point of the little finger.—2. In the case of *Icterus* which had existed for two months, the liver was found to be very much tuberculated, and there were many biliary calculi in the gall-bladder.—3. The case of *Physconia* was occasioned by enlarged mesenteric glands. The subject was a child who had many scrofulous swellings in different parts of the body.—4. In the case of *Phrenitis,* death ensued after the first attack. The membranes were inflamed, and a considerable quantity of fluid was effused into the ventricles.—5. The fatal case of *Carditis* was accompanied with diseased liver, and anasarca. The heart was found to be very much thickened and inflamed, and the liver tuberculated.

Monthly Prices of SUBSTANCES *employed in* PHARMACY.

		S.	*D.*			*S.*	*D.*
Acaciæ Gummi elect.	lb.	4	0	Balsamum Peruvianum	lb.	34	0
Acidum Citricum		32	0	—— Tolutanum		24	0
—— Benzoicum	unc.	6	6	Benzoinum elect.		12	0
—— Sulphuricum	P. lb.	0	9	Calamina præparata		0	6
—— Muriaticum		2	0	Calumbæ Radix		3	0
—— Nitricum		4	0	Cambogia		10	0
—— Aceticum	cong.	5	0	Camphora		9	0
Alcohol	M. lb.	5	0	Canellæ Cortex		6	6
Æther sulphuricus		10	6	Cardamomi Semina opt.	lb.	10	6
—— rectificatus		14	0	Cascarillæ Cortex		4	0
Ærugo	lb.	7	6	Castoreum	unc.	5	0
Aloes spicatæ extractum		7	6	Catechu Extractum	lb.	3	6
— vulgaris extractum		5	0	Cetaceum		3	6
Althææ Radix		1	6	Cera alba		3	9
Alumen		0	6	—— flava		3	6
Ammoniæ Murias		2	6	Cinchonæ cordifoliæ Cortex (yellow)		6	6
—— Subcarbonas		4	0	—— lancifoliæ Cortex (quilled)		10	6
Amygdalæ dulces		4	6	—— oblongifoliæ Cortex (red)		16	0
Ammoniacum (Gutt.)		9	6	Cinnamomi Cortex		20	0
—— (Lump.)		5	0	Coccus (Coccinella)	unc.	3	6
Anthemidis Flores		2	3	Colocynthidis Pulpa	lb.	36	0
Antimonii oxydum		7	0	Copaiba		6	0
—— sulphuretum		1	3	Colchici Radix		3	6
Antimonium Tartarizatum		8	0	Croci stigmata	unc.	6	6
Arsenici Oxydum		1	6	Cupri sulphas	lb.	1	2
Assafœtidæ Gummi-resina	lb.	5	6	Cuprum ammoniatum		14	0
Aurantii Cortex		3	6	Cuspariæ Cortex		4	0
Argenti Nitras	unc.	7	0	Confectio aromatica		8	0

		S.	D.
Confectio Aurantiorum		3	6
—— Opii		6	6
—— Rosæ caninæ		2	0
—— Rosæ gallicæ		2	3
—— Sennæ		2	0
Emplastrum Lyttæ		7	6
—— Hydrargyri		3	6
Extractum Belladonnæ	unc.	2	0
—— Cinchonæ		3	0
—— Cinchonæ resinosum		5	0
—— Colocynthidis		4	0
—— Colocynthidis comp.		2	0
—— Conii		0	9
—— Elaterii		30	0
—— Gentianæ		0	6
—— Glycyrrhizæ	lb.	5	0
—— Hæmatoxyli	nc.	0	9
—— Humuli		0	9
—— Hyoscami	unc.	1	6
—— Jalapæ	2s. 6d. Res.	4	0
—— Opii		3	6
—— Papaveris		1	6
—— Rhæi		3	0
—— Sarsaparillæ		1	6
—— Taraxaci		0	9
Ferri subcarbonas	lb.	5	0
— sulphas		2	0
Ferrum ammoniatum		6	0
—— tartarizatum		6	0
Galbani Gummi-resina.		12	0
Gentianæ Radix elect		1	6
Guaiaci resina		7	6
Hydrargyrum purificatum		5	6
—— præcipitatum album		9	0
—— cum creta		7	6
Hydrargyri Oxymurias	unc.	0	9
—— Submurias		0	9
—— Nitrico-Oxydum		0	9
—— Oxydum Cinereum		1	6
—— Oxydum rubrum		6	0
—— Sulphuretum nigrum		0	4
—— —— rubrum		0	9
Hellebori nigri Radix	lb.	3	6
Ipecacuanhæ Radix		18	9
—— Pulvis		20	0
Jalapæ Radix		5	6
—— Pulvis		6	6
Kino		10	6
Liquor Plumbi subacetatis	M. lb.	1	8
— Ammoniæ		3	6
— Potassæ		1	6
Linimentum Camphoræ comp.		6	6
—— saponis comp.		4	6
Lichen	lb.	1	4
Lyttæ		14	0
Magnesia		12	0
Magnesiæ Carbonas		4	0
—— Sulphas, opt.		1	2
Manna optima		7	6
— communis		5	6
Moschus pod, (30s.)	in gr. unc.	40	0
Mastiche	lb.	7	0
Myristicæ Nuclei		20	0
Myrrha elect.		7	6
Olibanum		4	6
Opoponacis gummi resina		30	0
Opium (Turkey)		40	0
Opium (East India)			
Oleum Æthereum	oz.	2	6
— Amygdalarum	lb.	4	8
— Anisi	unc.	3	0
— Anthemidis		6	6
— Cassiæ		9	0
— Caryophilli		6	6
— Cajuputi		8	0
— Carui		1	6
— Juniperi Ang.		5	0
— Lavandulæ		4	6
— Lini	cong.	6	6
— Menthæ piperitæ	unc.	4	0
— Menthæ viridis Ang.		4	6
Oleum Pimentæ	unc.	6	0
— Ricini optim.	(per bottle)	12	0
— Rosmarini	unc.	1	0
— Succini 2s. 6d. ——	rect.	5	0
— Sulphuratum	P. lb.	1	6
— Terebinthinæ		1	4
— — rectificatum		2	6
Olivæ Oleum	cong.	20	0
— Oleum secundum		12	0
Papaveris Capsulæ	(per 100)	3	6
Plumbi subcarbonas	lb.	0	8
— Superacetas		2	6
— Oxydum semi-vitreum		0	9
Potassa Fusa	unc.	1	4
— cum Calce		0	6
Potassæ Nitras	lb.	1	6
— Acetas		10	0
— Carbonas		4	6
— Supercarbonas		1	8
— Sulphas		1	6
— Sulphuretum		2	6
— Supersulphas		0	9
— Tartras		3	6
— Supertartras		1	10
Pilulæ Hydrargyri	unc.	0	9
Pulvis Antimonialis		0	9
— Contrayervæ comp.		0	6
— Tragacanthæ comp.		0	6
Resina Flava	lb.	0	5
Rhæi Radix (Russia)		42	0
—— (East India) opt.		16	0
Rosæ petala		18	0
Sapo (Spanish)		3	0
Sarsaparillæ Radix		8	0
Scammoneæ Gummi-Resina	une	3	6
Scillæ Radix siccat, opt.	lb.	4	6
Senegæ Radix		4	6
Sennæ Folia		6	6
Serpentariæ Radix		8	6
Simaroubæ Cortex		6	0
Sodæ subboras		4	0
— Sulphas		0	6
— Carbonas		6	6
— Subcarbonas		2	0
— — exsiccata		5	0
Soda tartarizata		2	6
Spongia usta		26	0
Spiritus Ammoniæ	M. lb.	5	0
— —— aromaticus		5	6
— —— fœtidus		5	0
— —— succinatus		5	6
— Cinnamomi		3	0
— Lavendulæ		5	0
— Myristicæ		3	6
— Pimentæ		3	6
— Rosmarini		5	0
— Ætheris Aromaticus		7	6
— — Nitrici		5	0
— — Sulphurici		7	0
— — Compositus		7	6
— Vini rectificatus	cong.	27	0
Syrupus Papaveris	lb.	2	0
Sulphur		0	9
— Sublimatum		1	0
— Lotum		1	2
— Præcipitatum		1	4
Tamarindi Pulpa opt.		2	0
Terebinthina Vulgaris		0	10
—— Canadensis		8	6
—— Chia		14	0
Tinct. Ferri muriatis		5	6
Tragacantha Gummi, elect.		8	0
Valerianæ Radix		1	8
Veratri Radix		2	6
Unguentum Hydrargyri fortius		5	6
—— —— Nitratis		2	8
—— —— Nitrico-oxydi		3	0
Uvæ Ursi Folia		3	6
Zinci Oxydum		7	0
— Sulphas purif.		3	6
Zingiberis Radix opt.		5	0

Prices of New Phials per Gross.——8 oz. 70s —6 oz. 58s.—4 oz. 47s.—3 oz. 43s.—2 oz. and 1½ oz. 36s.—1 oz. 30s.—half oz. 24s.——The London Glassmen allow 10 per Cent, ready money.——The Manufacturers in the Country, where all Phials are made, allow 27½ discount, at three months credit, (carriage free,) to London.

Prices of second-hand Phials cleaned, and sorted.——8 oz. 46s.—6 oz. 44s.—4 oz. 33s. 3oz. 30s.—2 oz. and all below this size, 25s.—Three months credit.

NOTICES OF LECTURES.

Dr. P. M. Latham and Dr. Southey will commence a Course of Lectures on the Practice of Physic, at the Middlesex Hospital, in October next.

Dr. Squire and Dr. Davis will commence a Course of Lectures on the Theory and Practice of Midwifery and the Diseases of Women and Children, on Tuesday the 6th of August.—Particulars may be known by applying to Dr. Squire, No. 30, Ely Place, or to Dr. Davis, No. 18, Charlotte Street, Bloomsbury.

Mr. Guthrie will commence a Course of Lectures on Military Surgery early in October. The lectures to be delivered at his house, No. 2, Berkeley Street, Berkeley Square. The surgical demonstrations at the York Hospital.

LITERARY NOTICE.

Mr. Charles Bell is about to publish Part I. of Surgical Observations; being a Quarterly Report of Cases in Surgery; treated in the Middlesex Hospital, in the Cancer Establishment, and in private practice; embracing an account of the anatomical and pathological researches in the School of Windmill Street.

MONTHLY CATALOGUE OF BOOKS.

A Treatise on the Nature and Cure of Gout, comprehending a General View of a Morbid State of the Digestive Organs; and of Regimen: with some Observations on Rheumatism. By Charles Scudamore, M.D. &c. &c. 8vo.

Anecdotes, Medical, Chemical, and Chirurgical, collected, arranged, and transmitted, by an Adept. 2 vols. 12mo.

An Introduction to Comparative Anatomy and Physiology: being the Two Introductory Lectures delivered at the Royal College of Surgeons on the 21st and 25th of March 1816. By William Lawrence, F.R.S. &c. 8vo.

Outlines of the Veterinary Art: or, the Principles of Medicine as applied to the Structure, Functions, and Œconomy of the Horse. By Delabere Blaine. 8vo.

The Botanist's Companion, or Introduction to the Knowledge of British Botany, and the Uses of Plants. By William Salisbury. 2 vols. 12mo.

Compendium Floræ Britannicæ, auctore Jacobo Eduardo Smith, M.D. 12mo.

NOTICES TO CORRESPONDENTS.

We have received Communications from M. Giraud, Mr. Hennen, Mr. Blackett, &c. &c. *We have also to acknowledge a letter from* Mr. Bedingfield, *which shall meet our earliest attention.*

Communications intended for insertion in the subsequent Number should be sent before the 12th of the month; and should be addressed (free of expence) to Mr. Shury, *Printer, 7, Berwick Street, Soho; by whom Books for the Review Department, Articles of Int &c. will also be received.*

THE
LONDON MEDICAL
REPOSITORY.

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PART I.

ORIGINAL COMMUNICATIONS.

I.

Some Remarks on the Mineral Springs of Yorkshire, and on the Nature and Properties of Common Spring Water, as an Article of Diet. By J. K. WALKER, M.D. of Caius College, Cambridge, and Physician to the Huddersfield Dispensary.

I DO not here presume to direct the attention of the profession to those important and celebrated mineral springs which have already exercised the labours of scientific chemists, and the comments of eminent physicians. Such of these as are known, have already received their due stamp of importance. We owe, indeed, much of our knowledge on this subject to the very popular and interesting works of Dr. Saunders and Dr. Lambe. Let us hope that still further advances will be made in this department, alike interesting to the man of science and to the man of pleasure. I cannot help here remarking to what a pitch of credulity the belief in the efficacy of springs seems to have been carried in this country, antecedent to the reformation. Let the reader take up the valuable treatise of Sir John Flóyer, de Pseucrolusia, written in the reign of Queen Anne (a work upon which much plagiarism has been committed without the slightest acknowledgment); and he will there find recorded several interesting anecdotes of the very generally imbibed confidence in the virtues of mineral springs, and of the consecration of founts in almost every district, to which some miraculous ascription was attached.

These pseudo-ascriptions of fanaticism vanished with the decline of popery; but in the general disesteem which, deservedly, fell upon those of imaginary efficacy, some very valuable springs, it is believed, were consigned to oblivion. From the very crude and imperfect state of analytical chemistry, a knowledge of the real ingredients of mineral waters was hidden from our ancestors, which we by proper perseverance can now arrive at; yet, after all these improvements, so minute are some of the principles of mineral waters, that they can scarcely be detected, although we are sure from experience that they have a palpable influence on the remedial virtues of the water.

It is to be lamented, I think, that the use of many very useful mineral springs of minor efficacy should have been so thoroughly superseded by the superior eclat of our fashionable watering places. Many of these national resorts, indeed, claim exclusive and combined attractions in the amenity of the situation, salubrity of the air, or in the superior impregnation or temperature of the waters, which render them at once places of recreation for the man of business, and constitutional restoratives to the invalid; and it is probable enough, in some cases, that the credit of recovery is fairly ascribable as much to these casual advantages, as to the waters themselves. Let opulent valetudinarians quaff salutary libations at more celebrated fountains of Hygeia: to the poor, however, they are inaccessible. It is on their account, for the sake of the indigent ranks of society, who are debarred from the advantages of these distant scenes of resort, that I call upon the professional readers of the *Repository* not to despise the value of mineral springs in their own neighbourhood, which yet may be very useful, although not endued with those singularly brilliant properties ascribed to springs of greater notoriety. This populous county (Yorkshire) abounds with mineral springs of every kind;—minor constellations and also stars of the first order: and while Harrowgate, Scarborough, and Burlington, suit the maladies and finances of the rich, I could mention, at least, a dozen others*, in the same county, of the highest remedial pretensions which are within the reach of the poor. It is possible that a more extended experience of these minor springs may enlarge the boundaries of their qualities; but the properties which we already know that they possess, are sufficient to stamp them with importance, from their proximity to an extensive and manufacturing population; where a great mass of the poor, from their occasional inadequate nutriment, from the number of close-pent and ill-ventilated habitations, are more peculiarly exposed to the predisposing causes of that class of diseases to which these waters have proved, if not in themselves an antidote, at least a very powerful adjunct in expediting their removal. Indeed, the exhibition of mineral waters is more especially indicated in those anomalous cutaneous eruptions, of indefinite duration, which perpetually present themselves among the poor in manufacturing towns; some resembling variola, others urtica; others, again, with the semblance of herpes; and I am enabled to vouch for their utility in many such cases where they have been resorted to, as also for the benefit emanating from their employment in strumous affections. It should be hailed, at all times, as a happy acquisition in the heart of a manufacturing population to have within their daily compass the use of a mineral spring, the constituents of which are ranked amongst the most successful palliatives of scrofulous affections, in all its multifarious complications. Other remedies have had their use; but we know of no concentrated medicine which has a specific power of correcting a scrofulous habit. In an affection, so amalgamated with every fluid of the body, our best hopes of reducing it to a dormant state must be drawn from what the older physicians would call the non-naturalia; and all concur, that the habitual use of mineral waters has proved the most successful remedy.

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* At Askeron, five miles from Doncaster, there is a strong sulphureous water; at Bilton; at Broughton, in the West Riding; at Croft, in the North Riding; at Fitch; at Loansbury, in Lord Burlington's Park; at Malton; at Newton Dale, in the North Riding; at Normanby; at Skipton; at Thursk; and at Wigglesworth, in the West Riding. In the vicinity of the town of Huddersfield there are several which I have had great pleasure in analysing. One of these is near Holmfirth; others are at Kukhedton; Kirkburton; Lockwood; and near Staithwaite, on an estate of Sir Joseph Radcliffe, Bart.; with a few others not yet examined.

On perusing different writers on the subject of mineral waters, one is struck with the decided tone which they employ when treating on the analysis of medicinal waters. One would think that it was as much a subject of demonstration as any problem in Euclid; whereas it is notorious that there are scarcely two eminent chemists who agree as to the number or the proportion of the ingredients in any spring. Let any one refer to the different analyses at different times submitted to the public, and he will be satisfied as to the uncertainty which must even attend such investigation. As to the project of rivaling by art these spontaneous productions of Nature, I am free to admit that if such an artificial production shall exhibit the same phenomena with re-agents as the natural water, it may be received as a synthetical proof of the chemical contents of the natural water, but it cannot be called a fac simile of it. We may, it is true, produce some approximation to their constituent properties: but this, like all other imitations of Nature, falls far short of the original. Duchanoy, a French writer, published a work, in which he has given a number of processes for imitating all the mineral waters; and adds, that he himself has experienced the good effects of some of them. I am sorry, for my own part, to be obliged to confess, that after a good deal of chemical torture, I could never produce a perfect coincidence in smell, taste, colour, or pungency, with any one I proposed to imitate. If it had the smell and taste, it had not the transparency; or if it had the transparency, its taste was dissimilar: nor was their remedial discrepancy less remarkable; for, in a variety of cases, I have put such succedaneums to the test, but it required a much stronger impregnation than could be detected in the natural spring to produce equivalent effects. Thus, will it ever happen, that the simplicity of Nature transcends all the pedantry of Art; and though a wise man will do well to take her for his prototype, yet he must not forget that she uniformly keeps her imitators at a respectful distance. Not that we should not avail ourselves of our present knowledge in improving these imitations; nor is there any presumption in hoping that the rapid progress of Chemical Science will aid us in developing processes which may draw us to a closer resemblance of Nature.

The remarks which I am desirous of making on the virtues of common spring water will prevent me, on the present occasion, from subjoining my analysis of the mineral springs in the vicinity of Huddersfield; but as this is a subject purely of local interest, the public generally, I doubt not, will readily dispense with it.

To some it may seem superfluous to say a word on the quality of common water, on which so much has been written; but, as this objection might obtain equally with the generality of [illegible] I trust this, as well as the importance of rightly appreciating a fluid which enters into the composition of all animal [illegible] and has such a known influence on the performance of the functions, will be my sufficient apology. I am here pre[illegible] [illegible] read a lecture on the good effects of simple water[illegible] Its praises have been so often descanted upon, that [illegible] reader might easily infer, that nothing more was [illegible] attain antidiluvian longevity, than to quaff copious [illegible] spring water. This hydromania (if I may so term [illegible] increased prevalence to the doctrine of the [illegible] who contended, "that of all productions [illegible] water comes nearest to that universal remedy [illegible] after by mankind, but never discovered." [illegible] have insisted that it is pure or *distilled* [illegible] *panacea*, which is both to prevent and re[illegible] [illegible] the flesh is heir to." But, after all that [illegible] subject—after all the experiments to as[illegible] [illegible] we here find the pride of philosophical [illegible] Nature did not make her works for man to mend." Experience alone is the true criterion of the useful or noxious principles of every spring; and we find, contrary to all presumption, that now and then *a water of considerable impurity has suited some constitutions, and that very pure water has not agreed with others.* I am acquainted with a gentleman who has been in the habit of using no other beverage than water from a very impure spring for these last twenty years; and who insists, that if he substitutes but for a time purer fountains, he feels affected for the worse. However this may be, I certainly do not join issue with those who maintain, *that in all cases, for the ordinary purposes of diet, pure water might be substituted with advantage* for spring water. Is it not rather tantamount to arraigning the wisdom and goodness of Providence to urge, that what is an universal provision throughout the whole earth, can, when properly used, be detrimental to the constitution, or that another could be substituted more adapted to the human frame? *As a general rule* I admit, that where we are *left to our choice*, it would be wiser always to select for the ordinary purposes of diet that spring which is the freest from adventitious impregnation: for the purer the water, the more innocuous it becomes from its negative properties. Dr. Armstrong has beautifully expressed this in the following lines from his "Art of Preserving Health."

> What least of foreign principles partakes
> Is best: The lightest then; what bears the touch
> Of fire, the least, and soonest mounts in air;
> The most insipid; the most void of smell.
> Such the wide mountain from its horrid sides
> Pours down.—

In all cases when we speak of the purity of any water drawn from a spring, we merely mean its *relative purity:* no spring-water having been at any time discovered that is entirely destitute of foreign ingredients. And all that we have in our power to do, is to reject that which upon experience is found to contain the most exceptionable ingredients in point of quality and quantity. It is not because water is tasteless, or transparent, that it is pure: sea-water is transparent, yet replete with salts. It is not because it does not coat the sides of a tea-kettle, or curdles soap, that it is pure: a water largely impregnated with muriate of lime will do the first; neither will carbonate of lime, in its ordinary preparations, always do the latter. In short, there may be a total sterility of all exterior characters appretiable by the senses, and yet a single test shall expose a superabundant impregnation. It is unnecessary to observe, that a great proportion of the springs which are in common use, contain different proportions of selenite. Amongst some hundreds that I have examined, I have not found half a dozen without it. In fourteen of the springs near this town, the proportion of selenite to the bulk of the water, is as 1·1000; in four others, as 1·800; in three others, as 1·700; in another, as 1·600. These are independent of the carbonates or muriates. Now, *a constant water-drinker, who shall consume no more than a pint a day of the weakest of these impregnations, will have taken, in the course of the year, nearly half a pound of selenite, or sulphate of lime.* It may be asked, if any bad consequences may be expected to arise from this impurity? If the testimony of every successive medical writer in proof of its occasional ill effects be worth any thing, one would answer in the direct affirmative. Dr. Mead*, in his treatise on poisons, has some useful animadversions on the use of impure waters. Their mischievous effects, he is of opinion, if not felt in robust habits in early life, are of serious consideration in weakly habits at a more advanced age. Nevertheless, I should think it *probable there may be other constitutions where such impurities* (as we term them) may be *beneficial.*

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* A late author, he observes, viz. Dr. J. H. "Scelera Aquarum;" or, a supplement to Mr. Grant on the Bills of Mortality, by searching into the first accounts of the distemper we call scurvy, described by Pliny, lib. 25, c. 3, &c. Strabo Geograph. lib. 6, under the promiscuous names of Stomachace and Salotyrbe, and examining the authentic histories made by the most observing physicians, finds that the origin of it was at all times and places charged upon the using unwholesome stagnating waters. Then, by comparing together the strata of earth about the cities of London, Paris, and Amsterdam, he shews that where the water is worst, there the malady is the most rife. So that *he has put it out of all doubt,* that most of the perplexed and complicated symptoms which are ranged under this one general name, if they do not entirely owe their birth to the malignity of this element, do however acknowledge it to be their main and principal cause. If we inquire into the reason, he adds, we are to attribute them to the salts with which waters abound, which, as Dr. Lister observes, are not to be mastered, and are indigestible in the human body---De Fontib. Med. Angliæ, p. ii. page 75. Not only, therefore, will these cause, as he very well argues, calculous concretions; and, as Hippocrates experienced, hard swellings in the spleen; but interrupt the digestion of our food—nay, besides all this, when they come into the blood, it is no wonder if insensible perspiration is frequently obstructed by them: for it is upon this store that Sanctorius teaches us, that heavy water converts the matter of transpiration into an ichor, which being retained, induces a cachexy—Medicin. Static. sect. ii. aphorism 6. What mischief will ensue, every one sees: not only pains in the limbs, livid spots in the surface of the body, ulcers, &c. &c. from the acrimony of the undischarged moisture; but many besides of those perplexing symptoms which go by the names of Hysterical and Hypochondrical, may take their rise from the same source.—Vide Dr. Mead.

I can even suppose that this very admixture may serve some wise purpose in the animal economy better than a water of a purer kind. It seems, indeed, as if Nature, by giving various gradations of purity, had put it in our power to accommodate the choice of our beverage to our respective constitutions.

Most philosophers are of opinion, I believe, that simple water alone does not constitute the exclusive nutriment of vegetables, but is only the vehicle of such nutriment. In its pure state it may indeed contribute to the increment of the plant, but it yields, confessedly, less vegetable matter than when impure; for we know by experience, that a plant will scarcely grow, rarely even thrive long, in distilled water. Rain water, we are assured, is a fluid of Nature's own distilling, yet it always abounds with adventitious ingredients. I have myself tried the experiment in rain water which fell after a thunder storm in a sultry day, which yielded even a saline substance on standing. This, however, is purest at a distance from towns; and when it falls in the neighbourhood of a spring affords spring-water, perhaps, at the maximum of purity in which it is ever naturally found. In such cases, it performs but a short filtration, sufficient however to part with its accidental impurities, although not long enough to dissolve or imbibe any foreign substance in its way. It is for this reason Dr. Armstrong, who was no less a philosopher than a poet, panegyrizes the purity of mountain springs; and probably many of those extraordinary instances of longevity narrated of persons residing "on the mountain's brow," may be as much owing to this purity of their water, as to any assumed salubrity of their air.

Among the predisposing causes of lithiasis, Van Helmont has placed the inordinate use of waters depositing calcareous incrustations; and even Pliny tells us (lib. 31. cap. 3.) the opinion of his contemporaries: "that those waters are condemned in the first place which when boiled do incrustate the sides of the vessels." Now these depositions, it is plain, cannot be either the muriate of lime or of magnesia, which have extremely soluble properties, and have never yet been detected in the incrustations of vessels: the depositions here alluded to, we know, are carbonates and sulphates of lime. I could here, also, beg to draw the reader's attention to the quality of the different Lithic salts. He will perceive that the bulk of them, consisting of oxalate of lime and phosphates of lime,and of magnesia, are amongst the most insoluble salts which we possess, and on that account the easiest of deposition; and that the period of their deposition seems to be in the ratio of their insolubility, the oxalate of lime, the most insoluble, being deposited first, frequently forming the nucleus of some calculi, while the rest form different laminæ in the order of their solubility. I should hardly conceive it possible, therefore, for such a salt as *muriate of lime*, which is soluble in half its weight of water at a temperature much lower than the human body, to enter into the composition of human calculi; for while the urinary secretion remains unimpaired, any deposition of muriates would be redissolved almost as soon as formed. In all such affections, therefore, I should consider the above reasons as justifying a preference of waters impregnated with muriate over others loaded with sulphate or carbonate of lime. I would observe too, as additional motives for such a preference, that in all the morbid concretions, such as the biliary, urinary, and arthritic calculi, as well as in pulmonary or hepatic concretions yet analysed, although lime has been found in combination with the carbonic and phosphoric acids, and in diabetic urine with the sulphuric acid, yet, no muriate of lime has ever been found or hinted at in any of these morbid formations. I have often been astonished at the effects of waters very minutely impregnated with this salt. We are in the habit of ordering the solutio muriatis calcis (vide Edinburgh Pharmacopœia) in doses of about thirty drops to a child, and sixty to adults, twice or thrice a day; yet it is remarkable how very trifling its effects generally are: only substitute in its place a water, used as a dietetic, with a very small proportion of this salt in it, and, in many cases, you will derive a far superior advantage. Such, I apprehend, will be the result of every essay to imitate the spontaneous productions of Nature; for even after every practicable synthetical precision which shall apparently combine all the ingredients to be found in the natural spring, yet dissimilar constitutional results supervene; so that in whatever way we view mineral springs, they present a combination of medicinal powers superior to what we can account for, from their ascertained impediments.

We are certain from the extremely soluble properties of most of the muriates, which, let it be observed, convey the leading medicinal excellency to sea water, and to the Harrowgate, Moffat, and Lemington waters, that no mineral impregnation received into the stomach is more likely to permeate the whole habit and to penetrate the minutest ramifications of the vascular system, for no other salts are retained in solution with such pertinacity and part with their menstruum with such reluctance. The soluble property of muriate of lime is a thousand times greater than sulphate of lime, which is diffused in almost all our spring waters in different proportions. In all cases, therefore, where it is an object to choose a salt which is precipitated from its menstruum with the greatest difficulty, one would choose a water impregnated with muriate of lime rather than another, which holds only sulphate or carbonate of lime.

Hitherto the number of springs which I have met with in my own immediate neighbourhood* that possess any notable impregnation with muriatic salts are very few; but of the principal part of our springs, I am happy to testify that there is little ground of complaint, on the score of impurity. Though I have been much in the habit of keeping a register of diseases in different parts of this neighbourhood, and of ascertaining the qualities of the water used in each; yet the number of cases is inconsiderable where the disease could be fairly charged upon the water. If any such connection could be said to exist at all, it probably occurred in some of those numerous scrophulous cases which appeared, in my opinion, more malignant and obstinate in those districts where the water, used for the ordinary purposes of diet were strongly impregnated with selenite and carbonate of lime.

I conclude by remarking how desirable it is, that in future, writers on the virtues of mineral waters, instead of calling in the hollow aid of hypothesis, and availing themselves too much of the latitude which the doctrine of sympathy allows them, would cease to indulge in over-strained suggestions drawn from a supposed analogy of symptoms, and would abstain from suggesting any property without giving some colour to such suggestion by practical reference. Else what would be more easy, after having once made it appear that any mineral water has a decided efficacy in diseases of one viscus in particular, to transfer by a legitimate induction a co-existing influence over every part of the human body, and more especially over those parts which we believe to possess a more direct sympathy with each other; such, for instance, as the sensorium and the alimentary canal. Now, although nothing can be more true than that such sympathy does exist, and that one organ cannot be benefited without general advantage to the whole system; yet to adopt this Parnassian privilege of indiscriminate embellishment, savours too strongly of empiricism; and to divaricate into a description of diseases, which are at most only remotely affected by the water in question, is to imitate the conduct of a mechanic, who, in describing a small improvement which he had devised in a very complicated machine, should favour his readers with a prolix account of the more important parts of its structure, merely because the whole is ameliorated by an improvement of one of its parts.

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* The sand stone, through which most of these springs pass, consists of grains of quartz, cemented by an argillaceous and sometimes even a siliceous basis. Its colour varies, but is most commonly grey; and in some parts it contains seams of coal interspersed through it.

II.

Observations in Proof of the Contagious Nature of the Bulam Fever; and on the Mis-statements of Dr. BURNETT *regarding that Disease.* By WILLIAM PYM, Deputy Inspector of Hospitals, &c. &c.

THIS subject, politically and socially important, I had great hopes was exhausted. The facts brought forward by me, in my publication in favour of the contagious nature of this fever, are unequivocal; and, if acted upon, will be the means of altogether checking its ravages, or at least of confining them within very narrow limits. Of this fact, every unbiassed mind has been convinced, except Dr. Burnett, who, urged by the mortification of his vanity, has again entered upon the subject more with the appearance of a personal attack upon me, than in defence of his theory. To his language I cannot attempt to reply: that, and his wilful misrepresentations, will satisfy every liberal-minded reader of the badness of his cause; indeed, every argument brought forward by him operate against himself, and proves how true it is "that he has published upon a disease which he has never seen." Overwhelmed with the evidence I have brought against him, he shrinks from the medical part of the question, and makes an attempt to throw discredit upon my account of the disease at Gibraltar in 1810; the reports of which were transmitted to the Director-General of Army Hospitals immediately upon its appearance; and by every opportunity that offered, in form of journal; at a time, too, when I had not the most distant idea of medical controversy.

My great object in publishing was to prove that the Bulam fever is a disease *sui generis*, distinct from *the inflammatory continued yellow fever, and from the bilious remittent of warm climates;* and not produced, like the one, from irregularity and exposure to the sun; nor, like the other, from marsh miasma; but *that it is contagious*, and capable of being imported to and propagated in any country enjoying a certain degree of heat: that it attacks the human frame but once; and rarely, or in a very mild form, natives of a warm climate: and lastly, that its contagious powers are increased by heat and destroyed by cold, or by a free ventilation of cool air.

That it has not been constantly resident in the West Indies, I proved upon the authority not only of history, but that of the Members of the late Army Medical Board; and I mentioned, that I had strong reasons for believing, that for some years past the Bulam fever had seldom, if ever, appeared in several of the islands. I now feel highly gratified in being able to lay before the public the following letter from Dr. Arthur, the gentleman who volunteered his services on board the transports in Gibraltar Bay, in 1810.

"Dear Sir, *London, August 1st,* 1816.

"Having served four years and a half in the West Indies, from whence I am just returned, I am clearly of opinion that the fevers now to be met with there, differ from that which I witnessed and laboured under, on board the transports in Gibraltar Bay, in 1810. This last seems to correspond with a disease which has not prevailed in the Windward Islands during my service there; but the destructive effects of which I have heard repeatedly described by the old inhabitants and officers who had survived it, as being equal to those of the plague.

"The present endemics, though now and then putting on rather a formidable appearance, fall far short of it. The highly contagious nature of it, as it appeared at Gibraltar, was so manifest, and the circumstances in proof of it so strong, that I did not think it could possibly admit of a doubt. I remain, dear Sir, your's, &c. &c.

"JOHN ARTHUR, M.D.
"*Physician to the Forces.*"

"To *Wm. Pym, Esq.* &c.

This statement of Dr. Arthur is confirmed by Mr. Thomas, Surgeon to the Royal Artillery, who is just returned from Barbadoes, where he has been quartered for three years. He informs me, that during the time he was quartered in that island the troops were remarkably healthy; and that during his residence there, he did not see any case of the disease described by me in my Treatise upon the Bulam Fever. Indeed, the general returns of sick, not only of the army, but of the navy, for some years past, prove that the Bulam fever has not existed in the Windward Islands.

If this fever was produced by irregularity, drinking spirits, or exposure to the sun, no warm climate would ever be free from it. The disease produced by irregularity, is a very different one; and is that described and accounted for by Dr. Burnett, in pages 4, 17, 139, 140, 142, 171, 189, and 200 of his work, from exposure to, and exercise in the sun; drinking spirits, &c.: but if this had been the cause of the fever at Gibraltar, how does that gentleman account for the females and children being attacked?—or why did it not shew itself in the course of a century before? Dr. Burnett, in support of his opinion, has produced two reports from the surgeons of the Barrosa and Raven, on the Barbadoes station; but these reports prove the health of the West-India climate at this period only, no death having taken place on that station during the space of fourteen months; which, if compared with the mortality on board the Vengeance, the Amelia, the Northumberland, the Atlas, the Arab, and other ships in 1804-5-6, a dismal picture will be presented. The Vengeance alone is said, by Dr. Gillespie, to have lost seventy men in a week!

In page 297 of my publication, I proved that Dr. Burnett had confounded three diseases; that the history of *his* fever did not correspond with his detailed cases, nor with the reports of the medical officers of the fleet: and to shew his inconsistency in a still clearer light, it is merely necessary to read the extract which he gives from Dr. Grant of Jamaica*: and I leave it to the reader to judge, whether Dr. Grant's account corresponds with my three species of fevers, or with Dr. Burnett's single species.

With respect to the grand question in dispute, its contagious nature, I cannot produce higher authority than the opinion and testimony of the Royal College of Physicians of London; extracts from whose Reports I subjoin: and if it is contagious, it is of course capable of being imported. Of this last circumstance, all Europe is aware; and regular precautionary measures are now established against it, not only in France, in Spain, and in Italy, but in the United States of America; which last country has escaped its ravages ever since the establishment of a proper code of quarantine regulations.

Report of the College of Physicians.

"We the President and Fellows of His Majesty's Royal College of Physicians in London, having by command of His Majesty's most Honourable Privy Counsil examined and considered the contents of a book, sent by their Lordships, intitled Observations upon Bulam Fever, by Mr. Pym, a Deputy Inspector of Hospitals, do Report thereon as follows:—

"That the author has with great assiduity and merit collected a variety of facts, tending to prove the contagiousness of the disease which prevailed at Gibraltar and in the South of Spain, in the years 1800, 1803, 10, 11, and 13; which coincide with, and fully confirm, the opinion we had the honour of transmitting to your Lordships on the 10th of January 1805†. There seems strong

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* Bilis in *febre flava* ejecta multo minus est in quantitate quam quæ ejiciatur in *febre Biliosa*, vel in hujus febris mitiore statu typo clarius vel distinctus Remittentis.—Vide *Burnett*, p. 259, 2nd edit.

† Extract from the Report of 1805:—"We are of opinion, that the disease which now ravages the town of Cadiz, Malaga, &c. is highly malignant; for although it has not, judging from the best information we can collect, the symptoms of the plague of Turkey and the Levant, it possesses an equal, if not greater, degree of malignancy; destroying life in a shorter time, and proving fatal to even a greater proportion of those who were attacked by it. The proofs of the malignancy of the disease, and of its powers of destroying human life, being equal to the worst of pestilentials, are full and *ample*.

"We are further of opinion, that the disease [illegible] contagious, and reason to believe, from the authority of Mr. Pym, Sir James Fellowes, the French and the Spanish Physicians, whose works we have consulted, that a person is not liable to a second attack of this disease. But upon a subject of such magnitude, the College cannot venture to give a positive opinion without further experience.

"We consider the precautionary arrangements made by Mr. Pym, at Gibraltar, as very judicious, and adviseable to be adopted in future. We have also reason to believe, that Mr. Pym is the first author, in this country, who has entered deeply into the investigation of this subject. (Signed) By Order of the College,

November 4, 1815. CLEMENT HUE, Registrar."

As a most satisfactory proof of contagion and importation, I shall bring forward the following extracts from the works of Dr. Caillot, published in 1815, which gained the prize, offered by the Society of Medicine at Brussels, for the best dissertation upon this disease. In page 195, he observes:—"La ville de Brest, située beaucoup plus au nord que Cadiz, a pourtant eu des preuves non équivoques du caractère contagieux de la fièvre jaune. Lorsque cette maladie était dans toute sa force au Cap, et qu'il revenait beaucoup de vaisseaux à Brest, un employé des douanes fut placé à bord de l'un de ceux qui avaient perdu du monde pendant la traversée; pendant le temps de son séjour á bord, cet homme contracta une fièvre jaune, dont il mourut dans moins de trois jours. M. Duret, chirurgien en chef de la marine, avait vue la malade, il en fit faire l'ouverture sous ses yeux, et l'on trouva toutes les traces que laisse après elle cette fièvre. Deux autres employés dans les mêmes circonstances furent également attaqués de la maladie des colonies, elle eut chez l'un d'eux une issue aussi funeste que chez le précédent; il succomba le cinquième jour, l'autre fut plus heureux il en réchappa. Il y en eut plusieurs autres exemples ou lazaret établi sur l'île de Tréberon dans la rade de Brest; nul doute que les sages measures proposées par le Conseil de Santé de ce port n'aient contribué à prevenir son introduction

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that the propagation of it has arisen from its contagious nature. On this most important point, we have paid particular attention to every document or fact that could help to guide our judgment. We find the disease making its first appearance at Cadiz; and spreading from thence to the neighbouring towns of Seville, Xeres, &c. We find the belief of its contagious nature among the people on the spot, manifested in the precautions taken to prevent its spreading, by cutting off all intercourse with infected places; and we find it stated, that these precautions have preserved some towns from the contagion, and that the neglect of them has given admission to the disease into others.

(Signed) L. PEPYS, President.
J. HARVEY, Registrar."

dans cette partie de la France." An equal, if not a stronger proof, not only of its contagious power, but of the possibility of its importation into Europe, is the following extract from page 202 of the same work.—" Le vaisseau sur lequel se trouvait M. Fauchon, ancien chirurgien-major, entretenu, de la marine au port de Brest, revenait en France apres avoir perdu beaucoup de monde au Cap et pendant sa traversée; arrivé à la hauteur du Cap Finistére, il prit un grand bâtement marchand qui sortait de la Mediterranée, et dont tout l'equipage se portait bien; peu de jour apres avoir été capturé, et qu'on y eut mis du monde, l'épidémie se manifesta â bord et enleva presque tout son ancien équipage." Dr. Cailliot had been at St. Domingo, where he had a very extensive experience; and he quotes many instances of the introduction of the disease into healthy ships and stations.

Dr. Burnett, in the second edition of his work, does not make the most feeble attempt to explain away the healthy state of the West Indies before 1793; nor the importation of the disease at different times into the United States, or into Cadiz in 1800; and with respect to that of 1804 at Gibraltar, when its introduction was so satisfactorily proved by the affidavits of Santo himself and Pratt, who resided in the same house with him at Cadiz, the account of which is given by Sir James Fellowes. He satisfied himself as in his first edition, by saying, that it is perhaps impossible to ascertain with any degree of accuracy (at *this remote period)* the credence which should be given to the story, although he now knows that the affidavits were taken a very few months after the circumstance took place. The affidavits prove, that Pratt resided in the same house with Santo at Cadiz; that Pratt took the fever, and Santo, who went to Gibraltar, was taken ill the first day after his arrival in the garrison, and communicated the fever to the whole of the inhabitants in Boyd's Buildings, to which spot it was confined for a considerable number of days. To account for the mortality in this spot, several causes were mentioned, particularly a cistern full of stagnant water, and a saw-pit filled with putrid animal and vegetable matter. To ascertain the truth of these Reports, Mr. Glasse (who is brought forward by Dr. Burnett, at p. 323, to say that it was most fatal at Gibraltar from the crowded and filthy state of the garrison) was ordered to inspect the premises, and among some documents with which Major-General Sir Charles Colville, K. C. B. has favoured me, I find the following Report signed by Mr. Glasse:

" SIR, *September 16th,* 1804.

" I have the honour to acquaint you, that on examining the premises of the late Mr. Boyd, I could not discover any *cause* from which the fever so prevalent on that building might arise. The cistern, which was reported to contain offensive stagnant water, had not two gallons in it, and that perfectly pure. The saw-pit was quite dry, it being under an arched roof: with regard to the bedding, I ordered it to be burnt, and I likewise ordered the bedstead to be immersed in water some time.

" I have the honour to be, &c.

To Major-General Burnett. " HENRY GLASSE."

The fact is, the garrison was in the most healthy state before the arrival of Santo. He was the first person taken ill, and as soon as it was ascertained that he had arrived from Cadiz, there was not a doubt upon the mind of any individual in Gibraltar, that he was the nucleus from which the contagion spread, and the importer of the disease. So much for the contagion and importation of the fever of 1804; the cases of which were not, as Dr. Burnett describes them, *slight at first;* on the contrary, they were most violent; five out of the first six attacked having fallen victims to the disease in a few days. Dr. Burnett, I must take it for granted, had some object (to borrow his language) in this wilful misrepresentation of facts, as he also had when he says (p. 430-1) by reference to Mr. Pym's Book, p. 20; " it will be seen that he arrived in Gibraltar on the 18th of October. It appears by Dr. North's Letter of the 18th, that he was confined by illness, and that Mr. Pym, consequently, upon his arrival, took upon himself the direction of the Medical Department; at p. 36 he informs us, that the German regiment, (De Rolle's) had only lost seven men in September; and as it appears, by an account inserted at p. 450 of Sir James Fellowes's publication, that no less than 187 men died in this regiment; and supposing two a day to have died during the eighteen days in October before Mr. Pym joined, there will still be 144 deaths to account for after that period, when Dr. North had nothing to do with them. If this immense mortality in the artillery had arisen from the use of the lancet, I think there can be no doubt Mr. Pym's friend, Mr. Kenning, would have mentioned it; *this however does not appear*, and I will put it to the good sense and candour of the reader, whether Mr. Pym's *vague assertions* can be put in competition with the *positive facts* I have brought forward in support of the propriety and success of blood-letting."

With respect to Dr. Burnett's *positive facts*, I shall avoid comment as much as possible (as it might lead me into indecorous expressions), and simply quote the motto with which he has headed his 389th page—" Magna est veritas;" and to this I shall have occasion more than once to refer. With regard to the above extract, introduced with the view of inducing his readers to believe, that the great mortality took place under my superintendance, he says, that I informed him that the regiment of Rolle lost only seven men in September; but he takes no notice of what I mention in the same page (36), that the artillery lost thirty-seven in September and 133 in October; nor does he take any notice of the general return (p. 40), in which De Rolle's regiment is mentioned to have lost 115 on the 20th of October, the day after my arrival, in addition to the seven deaths in September. The reader will judge of the credit to be given to Dr. Burnett's positive facts; and as that gentleman has called for Mr. Kenning's opinion of blood-letting, I am happy to be able to indulge him; and after the perusal of his letter, I leave it to the candour of every one to decide, whether Dr. Burnett has acted consistently with his motto:

" Dear Sir, *5th August*, 1816.

" I have no hesitation in saying, that in the fever of Gibraltar in 1804, I considered blood-letting as a great cause of mortality. I was anxious to adopt a different mode of treatment, but received positive orders from Dr. North to persevere in the use of the lancet. As soon as I had authority to discontinue the practice, the proportion of recoveries was much greater. I remain, &c.

W. Pym, Esq. London. " S. KENNING."

With respect to blood-letting, I must here quote an extract from Mr. Humphrey's account of the disease, in p. 353 of Dr. Burnett's work. He says, " Until the arrival of Dr. M'Mullen, Physician to the Forces, who reached this station in October (on the 29th), bleeding was held in the greatest dread, and if practised, *was imagined* to induce such debility as to produce death, except in a few cases where the temporal artery was opened, and four, six, or eight ounces of blood directed to be taken away. Dr. M'Mullen was sent out to this station from West India service, where he had had ample opportunities of observing this disease and its treatment on a larger scale; and the Doctor, after an examination in the town and garrison of Gibraltar, and the appearance on dissection after death, pronounced the disease to be the yellow fever of the West Indies, and not contagious. He immediately ordered bleeding to be employed freely at its commencement, and *almost* every patient recovered with whom this remedy was used."

As to what is termed the West India fever (that is, the Bulam), I doubt whether Dr. M'Mullen had an opportunity of seeing it. I have produced a letter from Dr. Arthur, who was four years and a half on the different islands, during which time it never prevailed; and from the following document signed by the Lieutenant-Governor *the day before Dr. M'Mullen arrived*, we must doubt whether he saw any cases of Bulam fever even at Gibraltar:

" *Gibraltar, October 28th,* 1814.

" The Board having taken into consideration the respective Reports on the subject of the public health during the week, are much gratified to report, that no case of fever has occurred amongst the Civilians since the 24th instant; that at present, *only six cases* of fever remain in the town and south, and that the few which have taken place with the military *continue to be mild.*

" Signed, CHARLES HOLLOWAY, Major-General, President.
" Approved, GEORGE DON, General."

This Report is dated the day before Dr. M'Mullen's arrival, therefore it is as probable that the cases he met with were the common bilious fever as the Bulam fever; and if he never saw this last, he was right in saying the fever of the West Indies was not contagious.

It is in vain again to enter upon the controversy of blood-letting. Dr. Burnett brings forward Mr. Humphreys, Mr. Lea, and Mr. Martindale in favour of it; but, from the official returns, they were not so successful in their practice as Mr. Fraser, Deputy-Inspector, Mr. Forte of the 26th, Mr. Sutherland, or Mr. Barker the surgeon of the 11th, who did not use blood-letting; and even Mr. Martindale, of whom he speaks so favourably, mentions (p. 403) having laid aside the use of the lancet (in consequence of its bad success of course), during the months of September and October, almost the whole of the time that the disease prevailed. All the other medical men quoted by him as having most experience and being best informed, Messrs. Dennet, Glasse, Lamert, and Amiel, reprobate the practice. The fatal effects resulting from blood-letting in 1804, made it be given up unfortunately too late; and in 1813 it was by a general order interdicted. *In the fever, however, which Dr. Burnett has seen, I agree with him in the benefit to be derived from its being early and abundantly carried into practice.*

Before closing this part of the subject, I cannot help noticing an instance of this disease prevailing on board His Majesty's ship Chichester, quoted by Dr. Burnett (p. 411), a full account of which is given in the Annual Register for 1802, and copied by Mr. Doughty, Surgeon to the Forces, in his Treatise upon Bulam fever: and if any person can doubt its contagious nature after reading this narrative, he must be sceptical indeed. On board of that ship ninety-one deaths occurred in the course of a month: and four healthy men, who went on board on the 8th of October, were dead in less than twelve days. Dr. Burnett, however, only notices what is called the success of blood-letting. The Chichester sailed from Jamaica on the 12th of October for Halifax, and before the

26th of the same month had lost fifty-one men. On the 26th of the month bleeding was commenced, to the extent of *eight ounces*, which in some instances was repeated a second and even a third time; notwithstanding which, forty more deaths occurred before the 16th of November, two days before they made the land of Nova Scotia, when the men were suffering severely from the cold. My object for noticing this narrative, is to shew, firstly, that the success upon the face of the journal does not appear so great as the advocates for bleeding suppose; and secondly, that if it was really successful, it had not a fair trial, as it was not commenced until fourteen days after the ship sailed from Jamaica, and that in the winter, when the cold is known to destroy the disease.

I shall now make some observations upon Dr. Burnett's reply to my publication, and I repeat again "he has never seen the Bulam fever." He is very angry with me for this assertion; and (p. 477) says, that he had often seen and treated the *concentrated* or *ardent yellow fever*, both at St. Domingo and Jamaica, and trusts that he profited much by the opportunities he enjoyed of making himself acquainted with the disease. This, I took it for granted, was correct, and carefully examined his book to find his description of the symptoms and the quantity of blood drawn from each patient, a practice he had derived so much benefit from in the Mediterranean in 1799; but, to my mortification, I only found the following passage at page 39. "I sailed for Jamaica in the Blanche, of 36 guns, in 1802, strongly prepossessed in favour of mercury; but a service of nearly a year and a half on that station, while it afforded me but too many opportunities of seeing the yellow fever, both at Jamaica and St. Domingo, served indeed to convince me that I had greatly over-rated its virtues. Without particular reference to the many patients who perished around me in the ships and hospitals, I may state that four of my most intimate friends died under the use of mercury: one of them, the first lieutenant of the ship, fully salivated; in the others, although taken in sufficient quantity, it produced no obvious effect." This is the only account he gives of his West India cruize; regarding which, as to me this relation did not appear satisfactory, I wished to see the list of the numerous patients who perished around him; and at the Transport Office was favored by Dr. Harness with a view of Dr. Burnett's journal; when I found that only twenty cases of fever appeared upon the face of it; thirteen of which were cured on board by purgatives, (calomel, gr. viii., jalap, gr. xv. was the dose,) and seven were sent to the hospital. The lancet was not used but once, and that in the case of a seaman who was wounded. Calomel was not given to one patient as an alterative, nor did one patient die on board during the whole time Dr. Burnett was in the Blanche; and when he left her, he moved into another ship with the view of coming to England on account of his health. This history explains his suspicions respecting my notes of the fever in 1804; when he says (p. 427), "It assuredly does appear very extraordinary, that he should have lost his notes in l'Athenienne where he was *only* on a voyage of pleasure, being on leave of absence from his duty in Gibraltar." I might deny this in strong language. I was not on a voyage of pleasure; but went to Sicily with views of promotion, and never expected to return to Gibraltar. I was put in orders to act as Deputy-Inspector soon after my arrival in Sicily; and I lost in the wreck of the Athenienne not only my papers, but books, plate, stores, &c. amounting to the value of nearly £1200. Such was the cause of the loss of my notes in 1804; and as to the cases which he calls for in 1810, he is aware that I was at the head of the department, and had not the charge of the sick.

Dr. Burnett (p. 415) says, "The next characteristic Mr. Pym gives as marking his *nova pestis* (an expression which I never made use of), is, that it generally terminates before the fifth day, and is very often attended with the fatal symptom of black-vomiting. By reference to p. 219 of this gentleman's book, it will be found, that out of a list of eighty-nine cases of this fever, which he says he attended in 1804 at Gibraltar, only five *became* convalescent before the fifth day; so that his own statement in the fullest manner contradicts his assertions." Here I must remind Dr. Burnett of his motto: the cases I attended at that time were not 89, but 105; and of the patients mentioned as convalescent, I did not say they *became* convalescent, but were *discharged* convalescent; and if he examines the list, he will find 56 *discharged* from the hospital on the 11th day after their admission, which was not, of course, immediately upon the cessation of febrile action. In dangerous cases, like Dr. North's and my own, or as Mr. Vance says (p. 416), where the patient does not complain until the second day, common sense will tell him that the convalescence will naturally be much slower! Dr. Burnett also says (p. 416), "he has abundance of evidence to prove that the fever of Gibraltar is generally a disease of much longer duration than is represented by Mr. Pym;" and immediately, in his usual inconsistent way, brings forward, in support of this assertion—first, the statement of Mr. Barker of the 11th regiment, who contradicts him in every word of his evidence. Mr. Barker says the *febrile action* in most of the cases appeared to terminate on the third or fourth days; and, in slight affections, early on the second day; although there were a *few* in whom it continued for a much longer period.

He next brings forward the evidence of Mr. Short, of the 60th regiment, who says, that of seventeen fatal cases, one died on the fourth day, one on the fifth, *nine on the sixth*, two on the seventh, two on the eighth, one on the ninth, and one on the tenth day of illness: and it is pretty clear that if Dr. Burnett had ever seen this disease, he would not have brought forward this evidence against himself; for he would have been aware that in thirteen cases at least, out of the seventeen, the febrile action had ceased on or before the fifth day; and that death took place in consequence of desorganisation of the stomach.

Dr. Burnett next makes an attempt to prove, that black vomiting is a rare symptom in Bulam fever. He observes (p. 423), "the occurrence of black vomiting in the epidemic of Gibraltar has not been so frequent a symptom as Mr. Pym would wish it to be believed, while it has repeatedly taken place in individual cases of fever when the garrison was otherwise considered healthy. I have said that black vomiting was a far less frequent symptom than has been asserted, which the following extract from the Official Reply of Assistant-Surgeon Martindale of the 67th regiment will clearly evince.—'Vomiting in some was present from the commencement to the termination; but in others it only came on with the second stage; the fluid thrown up was in one instance a dark brown; but in the remainder who died, I did not once see the black vomit.'" I cannot account for Mr. Martindale not having seen this symptom; but I can account for Dr. Burnett not having brought forward any other document in support of it. It is an unfair statement of the case, and inconsistent with his motto; for as he was in possession of the official replies of the other medical officers, he ought to have given them: for of seventeen gentlemen who made replies to Mr. Fraser's queries, Mr. Martindale and Mr. Lea were the only two who did not report black vomitings during the disease; or sphacelus of, and black matter in the stomach after death. To do away all false impressions, not only upon this point, but to shew at one view the symptoms, duration of disease, mortality, and treatment, I shall give a general abstract of the replies of all the medical gentlemen who were called upon; and I only wish it to be observed that the disease, *the fever*, or febrile action, terminated often in one day, and sometimes two or three days, before the death of the patient. This abstract will shew what reliance is to be placed upon the evidence brought forward by Dr. Burnett in support of what he calls *positive facts*.

GENERAL ABSTRACT OF THE REPLIES TO MR. FRASER'S QUERIES.

Names of Med. Officers.	*Duration, especially in fatal cases.*	*Mortal Symptoms, and those of Convalescence and Crisis.*	*Mortality.*	*Remedies.*	*Appearance on Dissection.*	*Second Attack, or Relapse.*	*Is it Contagious, or Infectious?*
Fraser.	6th or 7th day most fatal. 3rd day favourable.	*Mortal symptoms.* Suppression of urine, black vomit.	1 in 12.	Free & continued use of cathartics, viz. calomel, magnesiæ, vitriol. Cool air, antiphlogistic regimen.	As often described in books; for the most part there was less organic derangement than could have been expected from the violence of the symptoms.	No case of second attack or relapse.	Contagious.
Lea, 26th Regiment.	3rd to 5th day.	*Mortal symptoms.* Great debility; constant vomiting; low muttering delirium; cough, petechiæ; no crisis.		Bleeding & purging copiously in the first instance. Mercury afterwards to bring on salivation.	Increased action in the brain and membranes; inflamed stomach; other viscera rarely affected.	Several decided cases of second attack, and of relapse, with perfect remission, and not attributable to cold, fatigue, nor inebriation.	Not contagious.
Short, on duty with 67th Regiment.	[illegible]th day most mortal. 5th day most favourable for crisis.	The early appearance of severe symptoms, dangerous. No crisis except by ptyalism.	Nearly 1 in 7.	Saw bleeding tried in a few cases, wherein it proved detrimental. Cathartics in protracted cases; mercury as an alterative.	Erysipelatous inflammation of the stomach, with sphacelus containing dark fluid: other appearances variable.	Seven patients had had slight febrile attacks last year in Cadiz. No relapses.	Undecided.
Barker, 11th Regiment.	[illegible] day favourable [illegible] fatal, [illegible] marked periods.	*Mortal symptoms.* Incessant vomiting, like coffee grounds; early yellow skin; no crisis.	1 in 30.	Free & continued purging, deprecates bleeding. objects to mercury as an alterative.	Little or no alteration in the brain; dark coloured fluid in the stomach: gall bladder containing dark green bile.	No second attack; no relapses.	Contagious.
Amiel, Assistant Surgeon to the Forces.	5th to 7th day.	Is generally observed in fever; diaphoresis proved critical.		Seldom bled, constantly used cathartics, and mercury as an alterative.	Gangrenous spots on the stomach, dark fluid, liver enlarged, dark coloured viscid bile.	Notes two cases which he considers exceptions to an established law.	Occasionally contagious.

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Brady, 26th Regiment.	From 4th to 7th day.	*Mortal symptoms.* Increased and black vomiting; suppressed urine; and typhoid symptoms.	Last year 1 in 6; this year 1 in 11.	Purgatives and calomel once as an alterative. Of those bled last year, 4 in 5 died. V.S. in Nov. 1814 with good effect.	Black fluid in stomach; internal surface eroded and slightly corrugated; liver ash coloured, but not diseased; tar-like bile; kidneys natural.	Eight or ten men had similar symptoms last year; two of these died; the others were slightly attacked.	Contagious.
Sproule, Royal Artillery.	About five days.	*Mortal symptoms.* Black vomit; suppression of urine; no crisis.	Less than 1 in 6.	Cathartics, saline diuretics, cold affusion, temporal arteriotomy occasionally: objects to mercury as an alterative.	Brain vessels very turgid; stomach containing black fluid, and highly inflamed; kidneys inflamed; liver of a light color. Regrets he did not bleed from the appearance on dissection.	No case of second attack; two relapses from inebriation and cold.	Contagious.
Weld, 67th Regiment.		*Mortal symptoms.* Suppressed urine; debility, low delirium, constant vomiting, livor, petechiæ: convalescence always followed salivation.	1 in 5.	Cathartics, mercury constitutionally.	Determination to the head, internal coat of the stomach always highly inflamed, full of bilious fluid, sometimes black, green, pitchy bile.	Several.	Not contagious.
Playfair, Dillon's.	3rd to 5th day.	*Mortal symptoms.* Black vomit, suppressed urine, hiccough, crisis, frequently by salivation; late appearances of yellow skin.	1 in 5⅛.	Free use of purgatives. Mercury to salivation.	Turgescence and effusion within the encephalon, liver altered in colour, dark bile, black vomit, internal surface of the stomach and the kidney also diseased.	No case of second attack or relapse.	Not contagious.

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Jamelaro, Dillon's Regiment.	3rd to 5th day.	Black vomit. suppressed urine, and hiccough, dangerous; favourable late yellow skin; mercurial action.		Free purgatives; mercury to salivation.	Effusion within encephalon; yellow skin; liver changed in colour, not in size; black vomit: stomach and intestines diseased.	Never had an opportunity of observing it.	Not contagious.
Williams, Assistant Garrison Surgeon.	5th to 10th day.	*Mortal symptoms.* Incessant vomiting of dark fluid; suppression of urine; perspiration on the 2nd or 3rd day critical.	In the Lazeretto, 1 in 4.	Purgatives, calomel. Saline medicines.	Yellow skin: black fluid in the stomach, which appeared corroded.	Recollects that five patients admitted into the Lazeretto in 1813, were re-admitted there this year; but cannot trace the cases.	Undecided.
Dennet, Naval Hospital.	2nd, 5th, or 7th days, sometimes more protracted.	General phases of dissolution in fever; with black vomit, suppression of urine, and hemorrhage; convalescence denoted by tender gums and diaphoresis between the 3rd and 7th day.	1 in 35.	Seldom bled, always began with purgatives; cold affusion in increased temperature. Mercury as an alterative.	Black fluid in the stomach; kidneys inflamed; intestines and bladder empty.	Considers one attack to render a person less susceptible of a second. One man admitted with fever 12th Sep was re-admitted 8th Nov. following. No relapses.	Contagious: rendered inert by removal to a pure atmosphere.
Martindale, 67th Regiment.	Death from 3rd to 5th day. Convalescent from 3rd to 6th day.	Vomiting continuing to the second stage, with prostration of strength; delirium; livor and petechiæ mortal; no crisis.	About 1 in 4½.	Bled largely in July and August; laid it aside until Nov., when it appeared of benefit if used within the first 24 hours; cathartics indispensable; mercury serviceable.	Internal coat of stomach invariably highly inflamed, extending to the duodenum: liver never diseased, bile like pitch.	Several who had fever at Cadiz have been attacked with the prevailing fever. Four relapses.	Not contagious; but seven orderlies were attacked with the disease.

Names of Med. Officers.	*Duration, especially in fatal cases.*	*Mortal Symptoms, and those of Convalescence and Crisis.*	*Mortality.*	*Remedies.*	*Appearance on Dissection.*	*Second Attack, or Relapse.*	*Is it Contagious, or Infectious?*
Consodine, 11th Regiment.	5th & 9th days most fatal.	*Mortal symptoms.* Incessant irritability of stomach, singultus, suppressed urine, black vomit, convalescence as general in fever.	1 in 50.	Did not bleed—conceives it inadmissable; cold affusion; tepid bath; blisters to the neck; free and constant use of purgatives; never used mercury as an alterative.	Stomach full of black fluid—urinary bladder contracted and empty in some instances; turgescence of the vessels of the head was perceptible.	No instance of second attack.	Highly infectious, believes it so from the succession of cases in families, &c.
Foote, 26th Regiment.	From 4 to 7 days generally.	*Mortal symptoms.* Increased vomiting; black vomits and stools; typhoid symptoms; fever subsiding about the fourth day; diaphoresis; eruption about the mouth favourable.	Under his immediate charge no deaths.	Appearance on dissection did not induce him to bleed; prefers purgatives; disapproves of mercury.	Fluid like coffee grounds in the stomach and intestines; internal coat of stomach corrugated, liver ash coloured, not diseased; tar-like bile; kidney natural.	Can give no reply.	Contagious from succession of cases in families.
Sutherland, Hospital Assistant.	Eight days the mean duration: has known it fatal in three.	Suppression of urine, invariably mortal; the other unfavourable symptoms as general in typhus; crisis occasionally denoted by eruptions on the lips and forehead, together with red deposit from the urine.	Had at least 40 patients under his immediate care, of whom none died.	Never saw or tried bleeding, used purgatives constantly & freely; recommends cool air and cool drinks, cool lotions to the forehead; tepid spongings; never exhibited mercury to affect the system. When it did this accidentally, it seemed to do good; clysters, spir. ether. nitros.	Gives a dissection report of one case; yellow conjunctiva; stomach, to the extent of a crown piece, of a rosy colour, containing chocolate-coloured fluid, like grumous blood and water; liver ash coloured, natural substance; dark green bile.	Heard two persons say they had the disease twice. Saw one or two slightly ill in consequence of constipation after the first attack.	Undecided. Inclined to think it contagious.

Names of Med. Officers.	Duration especially in fatal Cases.	Mortal Symptoms, and those of Convalescence and Crisis.	Mortality.	Remedies.	Appearance on Dissection.	Second Attack, or Relapse.	Is it Contagious, or Infectious?
Thompson, Hospital Assistant.	Refers to Mr. Short's reply.	Black vomit and suppressed urine the most unfavourable; otherwise as general fever.	Refers to Mr. Short's reply.	Did not see bleeding used; cathartics useful; mercury as an alterative apparently beneficial.	Erysipelatous inflammation of the coat of the stomach.	One relapse.	Not contagious.
Humphries, Royal Artillery.	About the 5th day.	*Mortal symptoms.* Incessant vomiting, and dark-coloured; suppression of urine; dirty yellow skin; black tongue; coma delirium; convalescent by general in abatement of symptoms.	1 in 1 until he adopted V. S. no fatal cases thereafter	Bleeding; cathartics; mercury.	Vessels of the brain as if injected; black fluid in the stomach, which appeared inflamed, kidneys enlarged and diseased.	One case of relapse.	Not contagious.

Dr. Burnett (p. 432) enters into a defence of his opinion of the sequelæ of the disease, but it is unworthy of notice; as I have already, in my publication (pp. 265-6), so satisfactorily proved, by official documents, that after the Bulam fever in 1813-14, patients were not affected with diseased viscera, while the Temeraire man-of-war, after Dr. Burnett's fever, sent nearly eighty men to England as invalids.

In page 440, with a view of attacking me personally, he says: "in respect to what he (Mr. Pym) says of the quarantine laws, it is certainly not much to their credit, or rather to his administration of them, that the Bulam has so often appeared in Gibraltar, and the plague in Malta." In reply, I can only observe, that, during the many years I was quartered at Gibraltar, the disease never was introduced; but it occurred in the year 1804, *during my absence*, when it was supposed to be non-contagious by the officer at the head of the department; and in the year 1810, when it was immediately got rid of by the prompt and decisive measures I had recourse to.

Dr. Burnett's next and most violent attack upon me, but which only proves the weakness of his cause, is an attempt to throw discredit upon my official report to the Army Medical Board, respecting the commencement of the disease in 1810. At page 444 he says, Were the circumstances quoted above from Mr. Pym's book strictly correct, the inference to be drawn from them *would assuredly be in favour of the disease having been of a contagious nature.* But knowing, as I do, that the *facts* are not fairly represented, I must dissent from any such opinion; and, perhaps, before I conclude this part of the subject, I may convince him that my inquiries *were* not so remiss as he appears to think they have been. Before, however, proceeding immediately with the subject, I request the reader to turn to page 138, where, he says, on the 28th, 29th, and 30th, (Sept.) it was reported by letter to me (for I had proceeded to the fleet), that twenty-six men more were received into the Naval Hospital, labouring under fever, and several more followed them the succeeding days. This fever is introduced with the view of insinuating, that the Bulam fever existed in the garrison before the American family were attacked by it: that the men had fever, I allow, for I saw them in company with Mr. Gardner, and agreed in opinion with him that it was the common bilious fever with which seamen, coming from England in the month of September, and exposed to all the causes mentioned by Dr. Burnett as producing this disease, are very likely to be attacked. It was really the fever which Dr. Burnett has seen; but not the contagious, or Bulam fever; for, if I had thought it the Bulam fever, I should have immediately taken measures to cut off communication, not only with the Naval Hospital, but with the St. Juan and other ships in the bay. He, also, mentions some cases of fever among the bakers. These, of course, I saw; but without any suspicion of contagion. Many of the watermen, miners, and men in the public works, were at different times attacked by this fever; but it never created any alarm; because I knew both diseases.

At page 447, he gives Mr. Dennet's account of the case of a Mrs. Vaughan, who was said to have died of the *genuine yellow fever*, on the 13th of October. Mr. Dennet says, "Mr. Vaughan, commissioner's clerk, called at this place on the 12th of October, 1810, between the hours of seven and eight in the evening; when he acquainted me that Mrs. Vaughan was extremely ill, and requested my immediate attendance. I followed him to his quarters, situated near the north end of the south barrack, where I found her in a most deplorable state; her pulse scarcely perceptible; great inclination to vomit; cold clammy sweats; intense thirst; and, at half-past eight, black vomiting. I remained with her until ten o'clock, and then left her in articulo mortis—early on the following day she expired. I was informed by her husband, and a young woman who was attending her, that she had been confined to bed since the 5th of the month, having been seized about that time with *giddiness* of the head, accompanied by retching and vomiting; and that during the time of her illness she had been very open in her bowels. I did not perceive any particular colour of the skin by candle-light, except her lips, which were of a livid hue; but after death she was of a dark yellow. The matter vomited was very dark, and in great quantity during the time I was with her; and I was informed by the nurse that she had frequent vomitings of the same kind till her death. The fatal symptoms manifested in Mr. Vaughan's *case having appeared clearly to me to be* similar to those which attended *the epidemic fevers of Cadiz, Malaga, and this place, in* 1804, where the *impression of such a calamity was still present in the public mind,* I thought it incumbent on me to acquaint the principal medical officer of the garrison with this circumstance; for I considered her case to be of a malignant nature." Mr. Dennet's report is true, and his evidence all against Dr. Burnett; for Mr. Dennet evidently thought this was the Bulam, the same which he had seen in the West Indies, and what he had not met with before in Gibraltar: but I was not so much alarmed; 1st, because I knew that Mrs. Vaughan and her husband had both had the disease in 1804; of course not liable to a second attack; 2dly, because there was no appearance of disease in the neighbourhood; and, 3dly, there being circumstances attending the history of her case which led me not to suspect contagion, but that some deleterious medicine had been administered; and to cause inquiry to be made at the apothecaries' shops, whether she or any of her family had purchased arsenic or corrosive sublimate. It did not appear, if she had been ill from the fifth, that any medical advice was called in, until a few hours before her death!

Dr. Burnett next brings forward (p. 449) Mr. Amiel to prove, that the fever of Jacinto Rey was very nearly related to the bilious remittent of this country. Mr. Amiel attended not only Jacinto Rey, but all the other members of the family; and I make no doubt was aware of the friar (not priest) having visited the family during their indisposition: and, unfortunately for Dr. Burnett, I am in possession of his report, which I shall insert at length, and ask Dr. Burnett whether he suspects contagion in this instance, or whether Mr. Amiel himself was not of the same opinion upon this occasion as well as upon many others.

"Monsieur, Desirant satisfaire aux renseignements que vous m'avez demandé sur la nature de la maladie de laquelle est mort le Commis de Mr. Bouchetty, j'ai l'honneur de vous observer que je n'ai vu ce malade qu'une seule fois, c'étoit le premier jour de sa maladie environ deux heures après avoir été obligé de se mettre au lit. Il se plaignit d'un mal de tète insupportable, il avoit alors les yeux et le visage enflammés, le pouls vif et très frequent; et les symptomes, joints à une grande prostration de forces, me firent craindre une maladie très grave. J'avois été appellé la veille à traiter un de ses freres agé d'environ 18 ans. Sa maladie avoit commencé avec les mêmes symptomes, et du troisieme au cinquieme jour il éprouva constamment des nausées et des vomissements de matieres verdâtres; je continuai à visiter ce malade jusqu'au septieme jour, et pendant cet intervalle la mere, un jeune frere, la grand mere, et une voisine, que j'avois observé frequemment auprés du malade, se trouvant successivement attaqués d'une fievre, qui, quoique moins violente, presentoit les mêmes symptomes, me firent soupçonner l'existence d'une maladie sur laquelle j'allois appeller votre sollicitude, lorsque les sages mesures que vous fites adopter, couperent racine à un mal naissant, et dissiperent toutes mes inquietudes. J'ai l'honneur, &c.

R. Amiel, Acting Surgeon to the Foreign Recruits."

W. Pym, Esq. Deputy-Inspector of Hospitals.

Dr. Burnett (p. 351) gives the following extract from Mr. Humphreys:

"Many, he says, have been saved without losing blood; but generally speaking, the attacks *were slight;* and rest, with a little medicine, and the great aid of nature (which alone will frequently accomplish cures), was sufficient to restore them again to health." I beg to call not only Dr. Burnett's attention, but that of every reader, to these few lines. Is it not inconsistent to call this the *Concentrated Ardent Yellow Fever,* or *highly aggravated degree* of Bilious Remittent? So far from being concentrated, or highly aggravated, it is not only milder than the mildest form of bilious remittent, but milder than the simplest form of ague. These two last, I allow, are near relations, occasioned by the same cause, and the one an aggravated degree of the other; the remittent often terminating in an intermittent: but the first is a distinct disease, produced in the most healthy situations, like small-pox from contagion; and, like the small-pox also, which has its distinct and confluent forms, so the Bulam fever has its mild and malignant forms; a whole family being often swept off by the malignant form, while another family, perhaps, under the same roof, are attacked by the mild form, from which they rapidly recover, although both are treated precisely in the same manner. If it had any thing to do with marshy origin, it would occasionally appear in Gibraltar, under the form of intermittent: but I have proved that this disease is unknown in that garrison, excepting among the troops, who had suffered from it at a former period, either at Walcheren, or in Spain: and if any doubt existed upon the subject, its attacking the human frame but once decides the question.

Dr. Burnett (p. 441) gives an extract from my account of the commencement of the disease at Gibraltar, in 1810 as follows: "During the time the disease had been going on, on board the transports in the Bay, the garrison continued in perfect health until the 20th of October; when, in consequence (as I must suppose) of a breach of quarantine regulations, which, however, could not be detected, a Minorca family, in the south district, belonging to the dock-yard, was attacked with the disease. The first impression I received of it was on the morning of the 26th of October, in consequence of the death of one of them, a young man, clerk to Mr. Boscheth; he had been pronounced convalescent on the 24th; having, as the medical person who attended him supposed, a remission of all his bad symptoms, which proved to be only a prelude to gangrene of the stomach. I immediately visited the family; and found, from the history of the case of the deceased, and the situation of the other members of the family and their friends, that the disease we had so much reason to dread, actually existed. Six out of seven persons had already been attacked in one house; and three other families, neighbours, who had visited them, as also a Spanish priest, who resided in town, who had visited, professionally, the brother of the deceased; a carpenter in the dock-yard, and who I *suspected* of having communicated with the infected transports in the Bay. Within a few days, several persons, all neighbours of the first family taken ill, were declared to be infected. On the morning of the 28th, Mr. Redstone, Surgeon, 7th Royal Veteran Battalion, also reported to me the deaths of two men of that regiment, and that he had several other cases of fever in the hospital which he suspected to be of that nature: five fresh cases were also reported in barracks in the course of the day, &c. &c. Mrs. Nichols caught the disease from her servant: and within the walls of the town, a mile, at least, from the infected district, only two persons were attacked with the disease, viz. the lady who assisted Capt. Boyd, and the *priest* who attended the Minorca family."

To throw discredit on this account, he brings forward an affidavit, by Jacinto Rey, that the priest I mention was not a priest, but a friar: and (p. 450) he states that this friar did not visit him, but his father; and of course the other members of the family; and it was in consequence of this circumstance, when it was necessary to establish a precautionary quarantine upon every person who had visited the infected family during their illness, that this friar was discovered; and the only person within the walls of the town at that time labouring under the disease.

As to his affidavit, that he did not communicate with the transports, this is disproving what I never asserted: I only said, that I *suspected him;* and I do not conceive, that if he had committed a breach of quarantine, he would be such a fool as to confess it*. The difficulty of tracing the importation of this fever may easily be conceived, when the plague, which is not so liable to be confounded with other diseases, has not been traced either into Malta, Corfu, or Noja in Calabria.

Another case of misrepresentation, in 1810, by Dr. Burnett, is, that he says, "Ann Barlow, the wife of an artillery-man (vide page 2[illegible]6) remained ill in a small shed for *four* or *five* days within the *garrison*, which was *crowded* with visitors by *day* and *night*; and was removed in the last stage of the disease to the neutral ground, where she died with the black vomit." Upon this misrepresentation, I beg to call Dr. Burnett's attention to his motto; and shall state the case as taken down by Mr. Davie, surgeon to the artillery of Woolwich, on the 4th of August, 1816.

Gunner Barlow being examined, states, "that at Gibraltar, in 1810, his wife was taken ill in the night with fever; that early in the morning (about eight o'clock) he went to Surgeon Sproule, who very soon visited her; and immediately upon seeing her, put his shed in quarantine. He further states, that his shed was in the south, *not within the walls of the town*; that no person was allowed to enter the shed after his wife was taken ill; that *nobody visited her* during the whole of the day; and that she was removed to the neutral ground on the evening of the *same day* she was taken ill. She died on the 4th day of her illness, and her child thirteen days afterwards." This requires no comment. His statement respecting the seven veterans being attacked upon the 11th of October, rests entirely upon his own authority. Mr. Redstone's first case of Bulam fever appears in the return (page 286) as being taken ill on the 19th of that month, and not on the 11th. The first death happened on the 25th; and on the 29th, the whole regiment was in quarantine. The statement (p. 453) respecting the Cooperage Barrack is equally erroneous—it cannot be called *within* the walls of the town; for it forms one of the defences of the garrison, is completely insulated, and cut off from all communication, and has no surrounding inhabitants; and in 1810 was cut off by a barrier from all communication with the town.

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* Dr. Burnett wishes to make it appear, that this man did not derive his fever from the transports, but from on board the St. Juan; which, if I were to allow, would be bringing proof-positive of the contagious nature of the disease, as appears by Mr. Amiel's letter; which proves that every member in the family, as well as visitors, were attacked by it, one after another; not in consequence of having been on board the St. Juan, but in consequence of communication with this Jacinto Rey.

The only observation I have to make respecting cases of second attack, is that this, its most singular peculiarity, is now as well established in Spain, and among the Civilians at Gibraltar, as it is in small-pox; and the opinion of the French physicians, who had no small experience of it in St. Domingo, is given in p. 14 of Dr. Cailliot's Traité de la Fievre Jaune. That author, says, "Cette maladie n'attaque ordinairement qu'une fois le même individu; les exemples contraires aux Antilles et en Espagne sont trop rares pour ne pas être regardés comme des exceptions à la loi générale." Dr. Burnett, with all his efforts to contradict this established fact, brings forward (p. 469) Mr. Glasse, as having seen, with all his experience, two cases; Mr. Amiel, two cases; and Mr. Dennet, one case.

As to the cases of second attack, in the 26th and 67th, Mr. Fraser, Deputy-Inspector at Gibraltar, in his Report to the Army Medical Board, says, "It is further to be observed, that the surgeons in these two last-mentioned reports, not making any distinction between the epidemic and the common bilious remittent, it is by no means surprizing to find them noting the epidemic as a second seizure: for I have seen many instances of people having the malignant fever in its regular type, who, in preceding years, had laboured under bilious remittent. I therefore," he says, "conclude, that in the few instances of second attack, one must have been of bilious remittent." Mr. Fraser adds, "From the information I have collected in my official capacity, I declare, that in no inhabitant of Gibraltar, civil or military, where these cases have been watched with uncommon attention by thousands, has a single instance of second attack been so substantiated, as to move my opinion *upon this* point; and vast as are the proofs which I have stated, they sink," he says, "before the voice of the Spanish nation; the fact is confirmed by popular conviction; and upon it are founded acts of government."

This evidence, so decisive, of its attacking the human frame but once, I trust will convince the medical officers of His Majesty's navy and army of its contagious powers, and induce them in future to use the same measures as against any other contagious disease.

The peculiarity of its sparing natives of warm climates, is equally well established as that of its attacking the human frame but once: and not only destroys the case of Mr. Pringle, ordnance store-keeper, at Gibraltar, treated by Mr. Humphreys, and brought forward with such triumph by Dr. Burnett; but is the strongest proof in favour of the advantage derived by his family from secluding themselves from all intercourse with the garrison. Mr. Pringle is said to have adopted the most rigid quarantine, but did not escape: but I assert, that as he is an

East Indian, he was not liable to be attacked by the Bulam. The fever, therefore, with which he was attacked, was the common bilious fever, and not the Bulam; for if there was any cause within his quarantine boundaries to give him fever, why did it not also attack Mrs. Pringle and the children? Mrs. (Surgeon) Durie, Royal Artillery, and family, resided within five yards of Mr. Pringle's house; every individual of which, as well as servants sent to assist them, were attacked by the disease. If any local cause gave it to them, how can the escape of the Pringles' family, breathing the same atmosphere, be accounted for, but by cutting off communication with the infected? It is evident that Mr. Pringle, being a native of a warm climate, was not liable to, nor was he attacked, by the Bulam fever: if he had been so, his family would not have escaped it. Mr. Humphreys only mentions one other person in quarantine being attacked, viz. the officer's lady, in the castle; but he forgets to mention, although her husband escaped, that she lost her brother by the same disease, and that her sisters had an attack of it. Why does he not take notice of 500 men in the Dock Yard escaping the disease by keeping themselves in quarantine, which he knows was the case? Dr. Burnett's cause is so bad, that like a drowning man, he grasps at every straw in hopes of keeping his head above water. He attacks, in his second edition, not only Sir J. Gilpin, but Mr. Fraser, and his own friend Mr. Morgan for his strange opinion; and, with a view of throwing discredit upon the idea of the importation of the fever into Gibraltar in 1813, in page 311, accuses Mr. Cates of practising medicine there *by virtue of a certificate from me:* "a document," he says, "coming from such a source, certainly must be viewed with suspicion." As to the certificate, I shall simply deny the accusation; he does not practise by virtue of any certificate from me; and caution Dr. Burnett to be aware of putting himself in the power of, or upon a par with, Mr. Cates, who, I believe, has been established in Gibraltar ever since the 10th or 17th of October 1795!

Another of Dr. Burnett's misrepresentations is his observation, that "in the year 1813 the Samson was in strict quarantine for several months before the malady made its appearance, and a Board of Health was sitting almost daily on account of the plague which had broken out at Malta."

This last part of the paragraph is true; but he well knew that quarantine was *not* established *upon Spain.* On the 11th of August a vessel, called the Fortune, arrived at Gibraltar from Cadiz; one of the crew, being ill, was sent to the Catholic Hospital, and died on the 19th of the same month. Sir. J. Gilpin, in his Report to the Lieutenant-Governor, says, "I am inclined to believe that *this infectious fever* was brought into the garrison by a person who died of it soon after his arrival, as it was said, from a place known to be infected previous to his leaving it."

I have thus, I hope, established the contagious nature of the Bulam fever, and reviewed Dr. Burnett's Work; and, I trust to the satisfaction of every unbiassed reader, not only controverted his opinions and contradicted his assertions, all of which, I repeat, he has advanced, in his second as well as first edition, from hear-say information. I have proved that he has never seen the Bulam fever; which, from the respectable authorities and positive proofs I have brought forward, in addition to those in my publication, is ascertained to be a highly contagious disease, which has not prevailed at all times in the West Indies, but is of foreign origin; that it has at different times been imported into Europe; that it attacks the human frame but once; that it attacks in a very mild manner natives of a warm climate, and Europeans whose constitutions have been assimilated to a warmclimate by a residence of three or four years; and, lastly, that its contagious powers are increased by heat, and destroyed by cold, or by a free circulation of moderately cool air; which last peculiarity does away all the arguments and evidence adduced respecting the non-prevalence of the disease on the neutral ground, and which I mention particularly at page 200 of my Treatise upon the Bulam Fever.

III.

Account of a Lusus Naturæ in a Pig. By C. B. Rose, Surgeon, Botesdale.

Mr. Greengrass, a very well informed veterinary surgeon of this place, brought me a lusus naturæ, taken from a female pig in the operation of spaying; which displays a novel, yet apparently not very rare variety of hermaphrodite; formed by an uterus, having connected to it, on one side an ovarium, and on the other a testicle. The pig was at the usual age at which they are spayed, and presented, externally, the natural conformation. The ovarium, which was rather smaller than one taken from a pig of the same age, was about the size of a small flattened pea; and its shape uniform. It was connected to the extremity of the horn of the uterus, by a dense, short, flat ligagament; and also by a broad thin ligament, formed by the peritoneum; the corresponding fallopian tube passed off from the termination of the cornu of the uterus, ending in fimbriæ, and was pervious in its whole length. The testicle was as large as a nutmeg, and was attached to the opposite cornu by similar ligaments to those which connected the ovarium with the uterus; and which passed from the epididymis, and the body of the testicle to the extremity of the cornu of the uterus. The testicle had apparently the same structure as other testicles; and had the same coats as others while in the abdominal cavity: its epididymis ended in a vas deferens, very tortuous at first, but becoming much less so, as it passed along the broad ligament, taking the course of the uterus, and along the side of the vagina. I could not trace it to its termination, for it had been cut off with the uterus, just below, or rather behind the uterine end of the vagina; and was pervious through its whole length. The cornu of the same side gave off a fallopian tube also, which was very short in comparison with the opposite one, and terminated in a cul de sac under the peritoneal coat of the epididymis. Both cornua of the uterus had free communication with the vagina, and were open from one end to the other.

Mr. G. had never met with a similar thing in his own practice before (he has practised but a few years); but a neighbouring farrier, who has had very extensive practice of this kind, about four years since, met with two instances of the kind in the same litter of pigs. Mr. G. was present. The latter, between that time and his meeting with the one above described, has, he supposes, castrated and spayed more than 2000 pigs; yet I should say, this is not a very rare deviation from the natural structure, if other operators have met with this malformation in the same proportion, and considering the immense number of sow-pigs which are spayed. As I could not trace the vas deferens to its termination, I shall offer no opinion in regard to the possibility or impossibility of this animal impregnating itself, providing it had not been mutilated. I can see no reason why it should not be impregnated by the male animal. It would not be a difficult matter to decide both these points, when similar instances are again met with; and it is well worth the while of physiologists to take the necessary steps to do so.

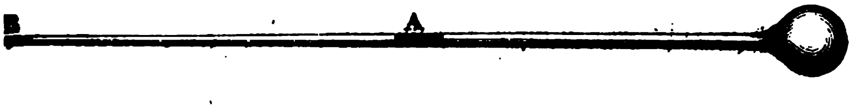
IV.

A Description of the Mode of Preserving the Vaccine Lymph in a Fluid State. By JOHN THOMAS GIRAUD, Surgeon-Apothecary, Feversham, Kent.

SINCE the last report of the National Vaccine Institution, in which mention is made of my contrivance for preserving vaccine virus in a fluid state, I have received several letters, requesting a description of the means made use of for that purpose. It seems, therefore, that, although upon its first invention, thirteen years ago*, and frequently since, I have taken some pains to make it public, it has escaped general notice.

If the discovery is of the importance that the approbation which it has obtained from the National Vaccine Board seems to bespeak, it may be promoting the service of vaccination by again bringing it into notice through the medium of your useful publication.

Fig. 1.



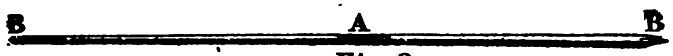


Fig. 2

A, the Vaccine Fluid—B, the ends of the Tube hermetically sealed.

The instrument is a glass tube, almost capillary; open at one end, with a bulb at the other; of the dimensions and form of *fig*. 1. To charge this tube with vaccine virus, a vesicle of proper maturity must be punctured in two or three places. The bulb must then be held in the mouth, the warmth of which will expel a portion of the contained air. The open end of the tube must then be applied to the lymph which exudes from the punctures, and the mouth withdrawn; the lymph will immediately ascend the tube, which may be successively applied to the several portions of it on the vesicle. In order to unite these several portions of lymph into one, they may be deposited on the thumb-nail by applying the end of the tube to it, and again introducing the bulb into the mouth; upon withdrawing which the fluid will re-ascend the tube, which may then be hermetically sealed, by holding the end in the flame of a taper. To make use of the virus contained in the tube, a small portion of the end of it must be broken off, and the lymph deposited on the thumb-nail in the manner above described, with which a lancet may be repeatedly armed.

Fig. 2 is a representation of the tube, deprived of the bulb, by fusing it in the flame of a taper, after the introduction of the virus. This may, for the purpose of being conveyed in a letter, be secured from breaking, by being inclosed in a folded slip of card or thin metal. It is obvious that both ends must be broken off; when, by blowing through the tube, the contents may be deposited ad libitum.

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* Vide *Medical and Physical Journal*, vol. ix. p. 397.

These tubes I have always made myself, by means of a lamp and blow-pipe. I believe there is an artist in the Strand, who makes many curious articles in glass, and who, I have no doubt, could easily copy them.

⁂ We rejoice in every opportunity of assigning the merit of any discovery, that promotes science and confers a benefit on society, to those to whom it is due. Some time ago we copied from a philosophical journal (vide *Repository*, vol. ii. p. 174) an account of a nearly similar invention, by a glass manufacturer, near Sunderland: it now appears beyond a doubt, that Mr. Giraud has the sole claim to originality in the invention of this ingenious and useful contrivance.—EDITORS.

AUTHENTICATED CASES, OBSERVATIONS, AND DISSECTIONS.

XXXV.—*A Case of Apoplexy.*

ON the 17th of March last, between one and two o'clock in the morning, the Reporter was requested to see Mr. R., a short man, nearly forty years of age, who had been spending the evening with two other gentlemen; and had eaten a hearty supper, and drank freely of punch. He was at a coffee-house, where there is a stone stair-case, in descending which, he was seized upon the first flight with all the symptoms of sanguineous apoplexy, and immediately fell down to the landing, carrying with him one of his friends on whom he was leaning. The scalp over the right squamose suture was divided about an inch in length, and bled freely; the blood also gushed from the right ear, the right nostril, and from both the orbits; indeed the attention of the Reporter was attracted by the large quantity of blood remaining upon the landing, which he thinks must have exceeded two pounds.

When he saw the patient, he was labouring under all the symptoms of apoplexy; was perfectly senseless, and nearly motionless. He was bled to the amount of sixteen or twenty ounces, from a large orifice, without any pulse appearing at the wrist; or, at least, it was barely perceptible. His situation appearing so hopeless, the Reporter dispatched a messenger to bring a cupper, who succeeded in abstracting full twenty ounces of blood from the immediate vicinity of the head; but the patient was not relieved by it. He was put into bed between the blankets, and a large blister applied where he had been cupped; another on each side of the neck, and one to each arm; whilst mustard cataplasms were also put upon both his feet. He was all this time unable to swallow; but with considerable difficulty his mouth was sufficiently opened to introduce about 12 or 15 grains of calomel, which were placed upon the tongue, a mode of exhibiting it that the Reporter has found very advantageous, when liquids cannot be got down; and which saves much time in a medical point of view. Between three and four o'clock the Reporter left him, expecting, on his morning visit, to find him dead. He was, in the mean time ordered to take a purging mixture composed of rhubarb, sulphate of magnesia, and tincture of jalap, if the attendants found he was able to swallow. They were also directed to give him a little tea, or thin water-gruel; but with great caution, as his mouth was much drawn on one side.

A little before nine o'clock in the morning, the Reporter saw him a second time, and was surprised to find he was better. He had vomited a good deal, but was still unable to speak; although he had swallowed a little of the purging mixture with a struggle and apparent reluctance. The sinapisms on his feet had begun to act, and he was drawing up the left leg, which was the least paralysed. His pulse was returned to the wrist with some energy, but was in a very fluttering state. The purging mixture was ordered to be followed up closely every hour till it purged very freely; which it did in the course of the day. In the afternoon, between four and five o'clock, he could articulate a little, and move in his bed. As he complained of being dreadfully sick, a saline effervescing draught with aqua cinnamomi, was ordered to be given every three hours, which had the desired effect. He passed a very restless night, but became sensible; and the action of swallowing was much improved. His bowels were continued acting by means of small doses of jalap, exhibited every four or five hours.

Early in the evening of the 18th he was seen in conjunction with Dr. B., who desired his medicines to be continued, leaving it in the discretion of the Reporter to apply leeches to the temples, if the stupor and dimness of sight remained. Late in the evening, therefore, six leeches were applied to each temple. Nothing but tea, the juice of oranges, and thin water gruel, were allowed him as food.

On the 19th, as he still remained heavy, a dose of his purging mixture was given, and repeated every two hours, until copious evacuations were freely procured, which afforded him much relief. The same general plan was continued on the 20th, 21st, 22d, and 23d, in which time he progressively improved, so as to be able to return home in a coach (a distance of three quarters of a mile).

On the 24th he was not so well, having passed a restless night: his pulse also became quick and hard, with slight symptoms of delirium; in consequence of which he was bled largely from the arm, and smartly purged with calomel and jalap.

On the 25th he was much relieved, but remained excessively deaf, more particularly of the right ear; on examination of which, a considerable discharge of pus was observed.

On the 26th he took draughts with infusum rosæ et magnesiæ sulphas, so as to procure three evacuations daily, which were continued till the 5th of April, occasionally increasing the peristaltic action by more active purgatives. He was still kept on the most slender diet possible.

On the 6th, as he was seized with bilious vomiting, he took an emetic, and opening draught, which relieved him; and after taking saline medicines for a day or two, he was put upon a slight course of mercurial alteratives, and stomachic bitters; with rhubarb occasionally to open the bowels. This plan he continued for six days, gradually improving; and on the 13th he was so well as unadvisedly to go some distance, by the help of his friend's arm, to give directions respecting his business.

On the next day, he was very unwell, but without any fresh attack of consequence; and as he remained quiet for a few days upon the same plan, he has since that time been able, with very great caution and restraint, to attend to his business. He continues quite deaf on the right side; but his spirits and general health are now tolerably good, although he drags his right leg a little; and the violent contraction of his mouth, although very much abated, is not yet recovered. His diet he strictly adheres to, and never omits having daily, at least, two evacuations.

PART II.

ANALYTICAL REVIEW.

I.

A Compendium of Medical Practice, illustrated by Interesting and Instructive Cases, and by Practical Pathological and Physiological Observations. By James Bedingfield, Surgeon, &c. 8vo. pp. 309. London, 1816. Highley.

This work is almost purely practical; and is the result, as the author informs us in his preface, of the more successful practice in the Bristol Infirmary for five years, during which period he was Apothecary to that Institution. This circumstance alone, if the details be faithfully given, is a recommendation to the volume; and we are of opinion, that nothing would more eminently contribute to the improvement of medicine, than the laying before the public the practice of extensive establishments for the cure of diseases: for in these only can experiments on the treatment of disease be readily made, and their results accurately ascertained.

Mr. Bedingfield has divided his work into eight sections; each of which comprehends the maladies of a certain division of the body. We shall examine each of these separately in the order of the arrangement he has adopted. Of the propriety of this order we have only to observe, that as fever is more or less the attendant of every disease, we can find no reason for inverting the usual order of nosological arrangement, by placing the section which treats of the theory of fever and of febrile diseases after those on diseases of particular parts; neither can we understand why rheumatismus is separated from the other phlegmasiæ, which are placed in this section, and classed with affections of the skin, anasarca, sphacelus, and scrophula. Our author has not indeed been more happy in selecting the titles of the sections. In the first, for example, which is intitled on *Diseases of the Brain*, &c. we are surprized to find the first chapter *on Painful Affections of the Scalp*, and the second on *Tinea Capitis.*

Including the two chapters which we have noticed, the first section treats of hydrocephalus externus and internus, apoplexy, hemiplegia, phrenitis, inflammation of the pia mater, cerebri abscessus, epilepsy, chorea, tetanus, tic douloureux, and concludes with a chapter on the functions of the brain.

Mr. Bedingfield conceives that the painful affections which usually attack the scalp are generally consequent upon some derangement of the digestive organs; but he does not notice that variety which is intermittent, and is evidently rheumatic. The treatment which he recommends, is the exhibition of five grains of the blue pill, once, twice, or thrice a week, as circumstances may indicate, "and eight drops of the arsenical solution three times a day." He has seen extensive incisions of the scalp, and even the trephine, resorted to, "but without any durable advantage." Under tinea capitis he includes all the species of porrigo; but applies the term especially to porrigo *larvalis;* for the cure of which, he chiefly relies on poulticing, in order to remove the indurated crusts, with the application of tar ointment and the internal exhibition of sulphur. In the species named *scutulata*, he recommends blistering, and dressing the blistered part with mercurial ointment, or a mixture of that and tar ointment, and frequent washing.

The third chapter, which treats of hydrocephalus externus, contains nothing worthy of observation; and the fourth, although in the commencement it promises much, yet, is scarcely more satisfactory. Five cases are detailed, one only of which recovered; and there is good reason for doubting that this was a genuine case of hydrocephalus: it was, in fact, a worm case; and the child recovered immediately after the expulsion of the worms. The other cases are evidently instances of sympathetic hydrocephalus. Mr. Bedingfield, very properly, regards this disease as the consequence of some distant local irritation in a morbidly sensible and irritable system, particularly depending on a scrophulous taint, which, says he, "may perhaps be considered the predisposing cause." The sympathetic inflammation of the brain which succeeds, he ascribes chiefly to "an irritability of mind;" but how, we would ask, can this explain the appearance of the disease in very young infants? We are rather inclined to believe, and we have the authority of the late Dr. Clarke in support of our opinion, that where there is a disposition to inflammatory action of the brain, and this is frequently the case in children of scrophulous habits, any local irritation, such as may be produced from dentition, foul bowels, worms, or biliary obstructions, becomes immediate causes of inflammation of the brain. There can be only one opinion, as to the fluid collected in the ventricles being the consequence of the previous inflammation.

The treatment of hydrocephalus Mr. Bedingfield divides into preventive and curative. The first consists in keeping the mind in as tranquil a state as possible, and attending to the state of the digestive organs. The food should be light, and taken in moderate quantity only at a time. We cannot exactly comprehend what is meant by avoiding all food "in which animalculæ are known to exist;" or in what manner our author imagines these animalculæ would act, were they taken into the stomach. The curative treatment comprehends venæsection both local and general, and purging; and, when effusion nevertheless takes place, the free and extensive use of mercurial frictions; which, it is justly remarked, if prescribed "with a view of exciting the absorbents to take up the fluid," must be useless, if exhibited "before the fluid has been deposited." Our author supposes, that in order to account for patients existing so long as they frequently do under the disease, we must admit, that part of the solid substance of the brain is absorbed "to form a receptacle for the fluid;" an opinion with which we must accord, notwithstanding the number of converts to the theory of Drs. Gall and Spurzheim on this subject.

The third chapter, on *Apoplexy*, contains nothing particular; nor is the disease even described, except by the nosological definition, quoted from Cullen, which stands as a kind of motto to the chapter. *Hemiphlegia*, which forms the subject of the next chapter, is described in the same brief manner; but some excellent remarks are made on the impropriety of employing stimulants early in this disease. The following is the judicious mode of treatment recommended by our author:

> " When there is nothing in the pulse or in the constitution of the patient *decidedly* to contraindicate it, the abstraction of blood from the arm or jugular vein will be proper. Large bleedings are not requisite; only enough of blood should be taken to reduce the impetus of the heart and arterial system, and to keep it in a state of diminished activity. This can be better done by abstracting frequently small quantities of blood from a large orifice, than by having recourse to occasional *copious* bleedings.
>
> " Whatever produces nausea has a tendency to excite absorption. Upon this principle the administration of emetic tartar in nauseating doses will be found highly serviceable.
>
> " We are not to content ourselves with exciting a disposition to vomit, for a few hours; we must persist in giving the antimonial for days, and even weeks, if we can prevail upon the patient to take it. As, however, a state of continued nausea is of all others the most distressing, we shall often be obliged to suspend its use.
>
> " The scalp should be frequently blistered and dressed with mercurial ointment. Once a week or oftener, if it should be necessary, a brisk purgative must be given."—p. 32, 33.

Phrenitis, the subject of the seventh chapter, is not even described by a definition. The treatment, which Mr. Bedingfield has seen successful, consists in blood-letting to an extent limited only by the " abatement in the violence of the phrenitic symptoms;" a strict antiphlogistic diet, active purging, and the assiduous application of cold spirituous lotions to the shaved scalp. It is justly observed, that

> " Thirty or forty ounces taken at one operation will more decidedly stop their progress than sixty or eighty drawn off by driblets of fourteen or sixteen ounces at a time. It will be found that persons bear the loss of blood well or ill in proportion to the degree of inflammatory action which exists.
>
> " A man, who in a state of health would faint from the abstraction of a pound of blood, will, when an inflammatory diathesis is present, part with two or three pounds, without any, or but trifling inconvenience."—p. 38.

This practice, however, may be carried to too great an extent, and the subsequent debility prove almost as dangerous as the disease for which the blood was abstracted.

In the eighth chapter, a case is given under the title " Inflammation of the pia mater," which we would call *acute* hydrocephalus, terminating in the inflammatory stage: but the description is, like many of those of our author, too short and general to be very satisfactory. In the account of the dissection, we are informed, in the first paragraph, that the *pia mater* exhibited no marks of disease; and yet, in the third, after stating that the tuber annulare, crura cerebri and cerebelli were almost veiled from the eye by a jelly-like matter, which filled the triangular space formed by the converging optic nerves, the author observes,

> " This obscurity was occasioned by the pia mater, which (where it is passing over the tuber annulare, crura cerebelli, and parts adjacent) was in a high state of inflammation. Its vessels were extremely numerous and had acquired an undue magnitude. The increase of vascularity extended upon each side of the medulla oblongata, and probably was continued for a considerable distance along the medulla spinalis."—p. 41.

The treatment in this case consisted of bleeding from the arm and temporal artery, active purging, blistering, and the application of cold lotions to the head: but we are not informed that the depletion was carried to the extent recommended in phrenitis.

Another case, which is named *Cerebri abscessus*, but which we regard as an example of *chronic* hydrocephalus, forms the subject of the next chapter*. The patient who had complained of occasional indisposition for a year and a half, had, when admitted, great pain of the head, which was drawn towards the right side; the pupils were dilated, and the right eye was in a state of strabismus; the bowels were constipated, and the pulse soft, regular, and 70 in a minute. She died on the third day after her admission to the Infirmary. The dissection displayed the remains of great vascular action.

> " The structure of a portion of the middle of the right hemisphere of the cerebrum was completely destroyed; a considerable excavation of that part of it which is opposed to the squamous plate of the temporal bone had been effected by the absorbents. A loss of substance had likewise occurred in the anterior and posterior lobes, but the mischief was more superficial. The walls of the cavity seemed to be without organization, the slightest force being sufficient to break them down."—p. 45.

We are afterwards told, " there was no pus or other fluid in the cavity of the abscess;" but as " the ventricles were distended with an immense quantity of water," we are of opinion that this loss of substance, which would appear like the cavity of an abscess only when the cranium was removed, was the consequence of absorption from the pressure of the fluid accumulated in the ventricles.

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* This chapter is marked viii. as well as the former, by which mistake the section appears to contain thirteen chapters only, whereas it actually consists of fourteen.

The ninth chapter contains some observations on the treatment of *Epilepsy*. The plan Mr. Bedingfield has seen most effectual, is the occasional abstraction of small quantities of blood, the exhibition of an active purgative once or twice a week, and oxyd of zinc in doses of five grains to adults, three or four times a day, on the intermediate days. He has given spirit of turpentine both in large and small doses, without any advantage being obtained.

In *Chorea Sancti Viti*, of which our author has seen upwards of forty cases, oxyd of zinc, exhibited in *nauseating doses*, is regarded almost as a specific. All of these cases were cured by it, with one exception, which yielded to a combination of opium and tartarized antimony. Occasional purgatives were employed; but constipation in none of the cases formed a prominent symptom.

Of *Tetanus*, which forms the subject of the eleventh chapter, our author has seen one decided case only, which terminated fatally. On dissection, the brain appeared healthy; and the tibial nerve, which was traced for some distance, under the suspicion that it might be inflamed, "instead of exhibiting any marks of inflammation, was exceedingly white."

On the subject of *Tic Douloureux*, Mr. Bedingfield offers no particular information on his own authority; but communicates the following case, which happened in 1813, in Guy's Hospital, to shew the result of an attempt to paralyze the affected nerve:

> "In the month of December 1813, a man was admitted into Guy's Hospital with Tic Douloureux. He had the infra-orbitar nerve twice divided without any good effect; he had taken the liq. arsenicalis with as little benefit; when one of Mr. A. Cooper's dressers suggested to him the probability of paralysing the nerves by the application of Cerussa. Accordingly, two scruples, formed into an ointment, were rubbed in the morning on the affected cheek, about an hour before the paroxysm of the disease was expected. This application was continued for a month or more, and the man left the Hospital apparently perfectly cured."—p. 59.

Our author remarks, in answer to the query, whether the disease was not likely to recur, upon the recovery of the nerve from the sedative effects of the lead? "I am inclined to think that the paralysis of the nerve will remain."

The thirteenth and last chapter of this section is intitled, "*The Functions of the Brain.*" We should think ourselves scarcely justified in entering upon the examination of a disquisition on this subject, regarding which so little is understood, and on which our author has certainly thrown no new light, were it not merely to show the mode in which he supports the opinions he has adopted. He conceives that the brain is a gland, fitted to convert the blood sent to it into a very subtile fluid, " in which the *living principle* essentially resides." He deduces the idea of the glandular nature of the brain from the circumstance, that the blood sent to it " is infinitely greater than is necessary for its developement and support;" that this is the case with all glands; and therefore the brain must be a gland. All glands " convert the blood sent to them into fluids;" consequently, if the brain be a gland, he conceives he is justified, in concluding, from analogy, " that the brain does the same." He next attempts " to investigate the nature and properties of this fluid," which he supposes resembles electric matter, but with this essential difference, that it is " endowed with the principle of vitality." This fluid is distributed to every part of the body by the nerves, which are the excretory ducts of the brain; for, as every gland has an excretory duct to carry off the fluid it forms, the accumulation of which in the gland would be destructive to its organization, it is equally requisite to preserve the brain from the over-accumulation of the vital principle; and our author observes, " the nerves are by their structure admirably calculated to conduct a subtile fluid." The mode in which this distribution of the nervous fluid is effected, he supposes is " precisely similar to that in which the electric matter passes along a metallic chain;" hence we may conclude that the brain is also an electrical battery.

But the most arduous part of the task our author has assigned to himself in this chapter, is his attempt to explain the manner in which the brain " forms the connecting medium between the soul and the body." He informs us, that we must ever remain ignorant of " the properties of the soul, or of the peculiar manner in which it is united to the body;" that it is a spirit, an emanation from the Diety; and as such cannot connect itself with the " gross animal fibre." But lest his readers should mistake Mr. Bedingfield's idea of a spirit, he informs them, in the same paragraph, that the subtility of the nervous fluid renders it a fit companion for the soul; which, therefore, appears to us to be in his opinion only a more subtile fluid, or spirit in the physical sense of the word, if we mistake not the meaning of the following passage.

> " That the nervous fluid in which the living principle resides, approaches nearer in its properties to those of the soul than any other, is also extremely probable; to me therefore it seems to be best calculated for conveying impressions made upon the body by external objects to the soul."—p. 69.

The subsequent paragraph is still more incomprehensible to our limited understandings; but as it contains a new theory of consciousness, we extract it, and leave our readers to form their own comment.

"Suppose an irritating substance applied to any part of the body; the consequence is an exhaustion or passing off of a quantity of nervous fluid. The expenditure of this fluid makes an impression upon the soul, and produces that sensation which we denominate consciousness."—p. 69.

The subsequent parts of this theory are equally lucid and convincing:

"The soul resides not in the brain only, but pervades every part of the body; it is however most intimately connected with the nervous system, through the medium of the nervous fluid.

"The soul, with its appendage, the nervous system, may be aptly compared to a spider upon its web. Touch the web ever so lightly, the animal is conscious of it; make an impression upon a nerve, a quantity of fluid passes off; by the escape of the fluid the soul is informed that an impression has been made.

"Place a person upon an insulated stool and charge him from an electrical machine; he is unconscious of the presence of electric matter till something which has an attraction for it is brought in contact with his body. We are all charged with nervous fluid, and should remain unconscious of its existence, if external objects did not, when brought in contact with it, occasion its partial expenditure.

"I am fully aware that many objections may be urged against this theory; it is impossible for me to anticipate them all. When they are brought forward, I shall, at some future period, feel great pleasure in answering them, or in admitting of their validity if they appear unanswerable."—pp. 69, 70.

Now, in sober earnest, we deeply regret that a writer of Mr. Bedingfield's good sense, should have wandered into a maze, in which he has so completely lost himself. He ought to know, that explanations of the nature of the functions of the brain, as connected with the mind, have always been regarded, by men of the highest scale of intellect, as completely visionary; that there is a certain point only in this subject, to which the human understanding dare with confidence venture; whilst, a step farther, and the stream of reason bursts its banks, spreading into a wild and shoreless waste of hypothetical conjecture.

To descend from such speculations, the second section of our author's arrangement professes to treat of *diseases of the fauces, trachea,* &c.: but, notwithstanding this title, the first chapter is on *ophthalmia,* which certainly belongs to the former section. It contains no particular novelty. The author relies chiefly on daily repeated scarifications of both the conjunctiva and the adnata; and keeping the eye constantly moist, with a solution of from one to two grains of opium in an ounce of water, applied cold or warm as the feelings of the patient indicate; at the same time abstracting blood, and employing antiphlogistic means, if symptomatic fever and pain of head accompany the local affection of the eye.

The observations of our author on the importance of scarification of the gums, in *dentition*, which forms the subject of the second chapter of this section, are extremely judicious. "In performing the operation, care should be taken that the edge of the instrument comes [come] in contact with the teeth; or but little benefit will be derived." In *odontalgia*, the fumes of henbane seed are strongly recommended; and the following given as the most eligible mode of applying them:

> "Put from one to two drachms of the seed upon a red hot iron or some lighted cinders, and immediately cover them over with a basin. As soon as you suppose the seed to be consumed and the vessel impregnated with the fumes, place it upon its bottom and fill it with boiling water. The person affected with the tooth-ache is then to inhale the vapour for twenty minutes or half an hour, a blanket or some other covering being previously thrown over the head and shoulders to prevent its escape. It will be advisable to go to bed immediately afterwards, as it often induces perspiration."—p. 77.

Mr. Bedingfield disapproves of the use of gargles in *cynanche*: instead of which, he advises the inhalation of the steam of hot vinegar; or the gradual deglutition of small quantities of honey acidulated with muriatic acid." In syphilitic sore throats, when the posterior part of the soft palate is affected, he recommends "the drawing a weak solution of muriate of mercury through the nostrils into the throat."

The fifth chapter, on *pharyngis ulceratio*; and of the sixth and seventh, on *laryngis ulceratio*, and *laryngis et tracheæ ulceratio*, having already appeared in the pages of the *Repository**, to which they were transmitted as an Original Communication by the author, we shall pass on to the eighth, which treats of *Bronchitis*. A case of this disease, which proved fatal, with the dissection, is detailed. The bronchial membrane was inflamed, and the cells filled with pus; and, which was remarkable, the pericardium, although both it and the heart appeared natural, contained about an ounce of a red fluid. Mr. Bedingfield is of opinion that the only remedy to be relied upon in this disease is "copious general and local evacuation of blood." He recommends the same practice in *Hæmoptysis*; and, although he admits that digitalis may be sometimes advantageously exhibited, "yet he appears to have conceived a strong prejudice against that medicine; and details two cases of its fatal effects, in one of which, at least, it appears by no means conclusive that the fox-glove produced the result attributed to it. The other part of the plan of treatment proposed in *Hæmoptysis* is that usually pursued, consisting in free exposure to cold and the exhibition of acids, with "acetate [superacetate] of lead:" but, we are surprised to observe that any of the benefit obtained is ascribed to the stypticity of the lead: the whole being, undoubtedly, due to its sedative properties. As might readily be supposed, *Phthisis Pulmonalis*, when completely formed, is regarded as incurable.

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* *Vide* vol. v. p. 194.

The chapter on *Pneumonia*, the eleventh of this section, contains nothing particular, except that our author objects to the usual mode of abstracting the blood from a large orifice, and offers the following reasons in support of his objections:

> " It has already been stated that, in pneumonia, it is peculiarly desirable to lessen considerably the volume of blood, as well as to diminish the rapidity of its circulation. By inducing syncope by the abstraction of blood from a small orifice, both these objects are with facility accomplished. It will be found that this is the most effectual way of arresting the progress of all active inflammatory diseases, more particularly if it be resorted to in their early stages. By it, decided and permanent relief will be obtained, and the necessity for such repeated venesection as is often demanded when an opposite line of practice is adopted, in a great measure obviated.
>
> " Debilitated persons are occasionally the subjects of inflammatory affection. It can scarcely be necessary to observe, that the practice here recommended is not adapted to them; it is only calculated for the vigorous and plethoric.
>
> " In weak habits, we may advantageously abstract a small quantity of blood from a large orifice."—p. 111.

To us this reasoning is not satisfactory; but we leave our readers to judge for themselves.

The next chapter contains an interesting case of *Empyema*, in which paracentisis was performed; but, although the patient apparently benefited for some time, yet, the case terminated fatally. The operation was, certainly, too late of being performed; and, owing to a communication which existed between the bronchiæ and the chest, " the lungs were incapable of expanding and filling up the space they had occupied."

Although our author so strongly objects to digitalis in hæmoptysis, he is of opinion that, in combination with nitre, it is serviceable in *Hydrothorax*; but the dose, he mentions, " a quarter of a grain of the powdered leaf, united with ten grains of nitre," is too small to procure the full effect of the medicine. This chapter, the last of the second section, contains some valuable remarks on the propriety of having recourse to paracentises when diuretics fail of relieving hydrothorax. The chief objections to this operation have arisen from the adhesions which the lungs are apt to form with the pleura costalis; but as these, our author remarks, are more generally at the anterior part of the chest, he proposes to make the opening " between the sixth and seventh ribs, about an inch and a half anterior to their angles." The proposal is certainly worthy of attention;

for although the discharge of the fluid may not cure the disease, it may protract the life of the patient, and afford time for the employment of other remedies.

The third section treats of *Diseases of the Heart*, &c. The first chapter contains a case of *Carditis* which terminated favourably. The practice which Mr. Bedingfield recommends, is copious venesection and the exhibition of opium. We extract the following passage for its singularity, both as regards the symptoms and the extent to which the depleting plan was carried.

> "A case of carditis has fallen under my observation, in which the whole arterial system seemed to participate. A violent and rapid pulsation could be seen, as well as felt, in its minute ramifications. It was peculiarly distinguishable in the labial and digital arteries. This man lost in twelve days, two hundred and sixty ounces of blood. For eleven days in succession, twenty ounces were abstracted, and on the twelfth, forty at one operation. From this last bleeding he derived more advantage than from all those which preceded it. Syncope was induced by it, and a permanent diminution in the force of the heart and arteries was affected. He recovered more speedily than could reasonably have been expected, and is at this time in perfect health.
>
> "This man sometimes prespired so profusely, that it became necessary to place vessels under the bed to catch the fluid as it trickled through bedclothes and sacking."—p. 133.

In the next chapter, on *Hydrops Pericardii*, a case of this disease is detailed, which demonstrates how little is to be depended on tact. A tumour, which extended from the pubis to above the umbilicus, occasioned by an enormously distended bladder, from which upwards of two gallons of water were discharged after death, was supposed to proceed from pregnancy, on which account the patient was discharged, "and died in the course of the following week." Nine ounces of fluid were found within the pericardium, and extensive ulcerations upon the surface of the heart, although no symptoms could be traced which could have led to a supposition of the existence of these. With regard to the mistake as to the condition of the uterine system, our author himself supplies us with a remark.

> "Professional men ought never to hazard an opinion, as to the condition of the uterus, without being first permitted to make such an examination."—p. 139.

The third chapter contains a case of very rare occurrence, *Inflammation of the Ventricles of the Heart.* The symptoms indicated an organic affection of that viscus, but none that can be regarded as diagnostic of the particular seat of the inflammation; and although the dissection demonstrated that the inner surfaces of the ventricles and the tricuspid and mitral valves had been in a state of high inflammation, yet it does not appear that the ventricles were the primary seat of the disease, as the aorta and pulmonary artery were both so much affected, that "their internal linings looked like a highly inflamed tunica conjunctiva." The lancet was not employed in this case.

In the fourth chapter, a curious case of palpitation of the heart is detailed; but as the body could not be examined after death, which did not happen in the Infirmary, no accurate opinion can be given explanatory of the symptoms. During the paroxysm, which occurred morning and evening, the heart pulsated 212 times in a minute. Mr. Bedingfield enters into a discussion to prove the possibility of ascertaining this fact.

With regard to *Polypi of the Heart*, our author conceives they are often the consequence of inflammation, and offers the following conjecture relative to their formation:

> "It is well known that, if blood received into a vessel be kept in motion with an unpolished piece of wood, the coagulable lymph will collect around it. In a manner precisely similar, I conceive the coagulable lymph to accumulate within the auricles and ventricles. From some accidental cause, as inflammation of one of the carneæ columnæ, the membrane is by the coagulable lymph thrown out deprived of its polished surface. The roughness thus produced, serves for a nucleus around which the coagulable lymph contained in the circulating blood gathers, and by degrees forms those extraneous bodies which are usually denominated polypi."—p. 153.

The sixth chapter contains a very interesting case of *Aneurism of the Aorta*; but it does not admit of abridgment. Our experience does not coincide with the remark of Mr. Bedingfield, that aneurism is "produced more frequently by the excessive use of spirituous liquors than any other cause." The lungs and bronchial glands were, in this case, loaded with carbonaceous matter, which our author supposes is "the product of arterial action;" and adds, "vessels distributed to the glands and surface of the lungs convert a portion of blood, which is sent to them, into carbon." Now, although we have scarcely thought upon this subject, and are not prepared to offer any explanation of the phenomena, yet we are by no means satisfied with the theory here stated. The liver in this instance was constituted of only one lobe, the right; and upon the left side of the suspensory ligament, there was merely "a small fleshy portion about the width and half the length of the little finger."

The seventh and concluding chapter of this section treats of the *Functions of the Pulmonary Artery*; and contains some new ideas of our author. He conceives that chyle is converted into blood in the pulmonary artery; into which it passes with the refluent blood, which returns by the pulmonary veins in the form of pure arterial blood; for, as no other means exist by which this conversion can take place, it must have been converted into blood by the peculiar action of that vessel. We confess there is some probability in this theory; but no experimental proofs are advanced in its support. What, we would ask, is the author's definition of pure arterial blood? We can perceive by the eye the distinguishing features of arterial and venous blood; but what alteration the admixture of chyle*, between which and blood there is the strongest analogy, would produce on the latter, can be scarcely determined, we believe, even by chemical analysis. He is of opinion that the milky appearance often met with floating in the blood upon bleeding, soon after a meal, is not chyle, but a state of the serum similar to that which produces the buffy coat in inflammatory states of the sanguiferous system. We cannot exactly comprehend our author's idea of the term secretion. He says it is evident that chyle is converted into blood by an action peculiar to the pulmonary artery; yet, in the very next paragraph, we find the following observation:

> "Every part of the body, whether solid or fluid, is the product of secretion. Is it probable that so important a fluid as blood should be without an appropriate organ for its secretion?"—p. 108.

We comprehend secretion to imply that function by which the secreting organ separates from the blood the component parts of a fluid, that does not exist in it already formed. Now, if this definition be correct, how can blood be secreted from chyle, when this fluid is mixed with ready-formed blood in the pulmonary artery, which is said to be the secreting organ?

The fourth section, *On the Diseases of the Stomach, &c.* contains much useful information. Mr. Bedingfield conceives that a very frequent exciting cause of *Dyspepsia*, which arises generally, merely from the stomach sympathizing with some other part, the real seat of disease is "an enlargement of the duodenal extremity of the pancreas." When dyspepsia, however, actually depends on a diseased state of the stomach, our author, besides the usual tonic and alkaline remedies, advises, every alternate evening, five grains of the blue mercurial mass; and details a case demonstrative of its beneficial effects. The same practice is recommended in *Pyrosis*. He has never seen *Hæmatemesis* terminate fatally, unless it arose from external injury, or ulceration of the stomach; and ascribes it generally to the suppression of some natural or long-continued evacuation; hence we must rely on periodical venæsection and purgatives for its relief. *Ulceration of the stomach* is properly regarded as irremediable. A case of it is described, with the dissection, by which it appeared that the upper surface of the stomach was adhering to the edge of the left lobe of the liver, which was excavated and "formed at this place a substitute for the stomach, the coats of the upper part of which had been entirely removed by ulceration." A case of *Gastritis* is detailed in the next chapter, to shew that the symptoms are often so obscure, that it may "destroy life without a single circumstance occurring by which its existence could be known, or even suspected, till within a few hours of dissolution."

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* Vide Vauquelin's Experiments, *Annales de Chimie*, vol. lxxxi.

The fifth and sixth chapters of this section treat of the *effects of ardent spirits, and of arsenic upon the stomach.* The prognosis in intoxication, our author informs us, is to be drawn from the degree of the inirritabile state of the iris, which remains immovably dilated when the danger is great. The practice on which he relies, is the exciting full vomiting, and the sudden application of cold water to the surface: as, for instance, by putting the patient under a copious shower bath. He observes, that although venæsection be indicated, yet he has seen "it employed to a great extent without any manifest advantage; more frequently it has proved injurious." Of the effects of arsenic he has seen one case only, which did not prove fatal; but it produced paralysis of the extremities, resembling that produced by lead.

The seventh chapter describes a peculiarity in the structure of the pyloric extremity of the stomach, which the author has not "seen any where noticed."

> "It consists in the interposition of a valve between the pylorus and duodenum. This valve cannot be satisfactorily seen either upon the recent subject, or on a wet preparation of the stomach. The best mode of shewing it, is to inflate the stomach with a portion of the duodenum, and allow them to become perfectly dry. In this state, if an opening be made into the stomach or duodenum, a valve attached at its basis to the whole circumference of the pyloric extremity of the stomach, with an almost circular opening in its centre, will be seen. The diameter of the opening bears about the proportion of one-third to the whole valve."—p. 193.

The eighth chapter, on *Splenitis*, appears to be introduced merely to publish the author's opinion, that the use of the spleen is "to regulate the quantity of blood, and the force of its circulation through the coats of the stomach." In the following chapter the symptoms and dissection of a case of *indurated Pancreas* are well described. Besides the symptoms of dyspepsia, bile was thrown up from the stomach, but rarely passed by stool; and it also appeared in the urine, and tinged the skin and tunica conjunctiva. A pain, resembling that produced by gall stones, was likewise felt; a symptom that leads *biliary calculi* to be often suspected, when they do not exist. A hard tumour was perceptible upon pressure being made in the epigastrium. The two next chapters, on *Icterus* and *Hepa-*

titis, contain nothing that requires notice. In the thirteenth chapter, on *The Functions of the Liver*, our author states it as his opinion, that the secretion of bile is performed by the hepatic artery; and that "the vena portæ is intended to preserve an equilibrium in the circulation of the blood." The truth of the idea of the secreting power of the hepatic artery he rests on the fact, that, in the lusus naturæ found by Mr. Abernethy and Mr. Lawrence, bile was found in the gall bladder, although the vena portæ terminated in the vena cava, instead of ramifying through the liver. Now, although we must confess this is not a subject on which our opinions are settled, yet we cannot concur in thinking, with Mr. Bedingfield, that the aberrations in the two above-mentioned cases are by any means conclusive as to the functions of the hepatic artery, in a naturally formed subject. It is a well-known fact, that one part often is, as it were, forced to perform the functions of another, which is either naturally defective, o impaired by accident. In both the instances alluded to, the hepatic artery was much larger than it generally is; and hence the quantity of blood transmitted through was adequate both for the nutrition of the liver and the small secretion of bile, which was the consequence of the malformation.

Our author's practice in *Peritonitis*, which forms the subject of the fourteenth chapter of this section, is bold and decisive; consisting of bleeding, both general and local, to an extent which is to be regulated solely by the violence of the pain and tenderness over the abdomen; of blistering and emollient enemas. He justly observes, that nothing is more deceptive than the state of the pulse in this complaint. *Enteritis* requires the same treatment. In the chronic form of peritonitis, besides applying leeches and blisters to the abdomen, he observes,

> "I have generally found five grains of calomel, and five grains of antimonial powder at bedtime, and on the following morning some castor oil, or sulphate of magnesia largely diluted, the most efficacious remedies."—p. 216.

In *Ascites* he relies on mercurial frictions, and the exhibition of elaterium given as a purgative once or twice a week. Few habits with which we are acquainted, would bear five grains of this powerful hydragogue, the dose prescribed by our author. We are rather surprized that he thinks it necessary, seriously, to refute the proposal of injecting some fluid into the abdomen after the operation of paracentesis, "with a view of producing such a degree of inflammation upon the peritonæum, as should be sufficient to excite universal adhesion between its opposed surfaces."

In *Tabes Mesenterica*, our author has nothing new to propose. In *Diarrhœa*, his practice is judicious. He deprecates the exhibition of chalk, kino, catechu, and other ingredients, until the bowels shall have been freed from offending matters.

> "For one, two, or three nights in succession, as circumstances may indicate, from three to five grains of calomel, with one grain of opium, should be given. On the following morning it may sometimes be proper to direct half an ounce of castor oil.
>
> "If it were necessary, I could safely state that at least fifty violent cases of diarrhœa have been speedily relieved by this practice at this Hospital."—p. 226.

He has seen active purgatives and mercurial frictions more frequently remove *Tympanites* than any other remedies. On the subject of *Worms*, we are pleased to be able to record the testimony of our author in favour of the efficacy of rectified oil of turpentine in tænia. It has been administered at the Bristol Infirmary with almost uniform success; and its failures in other situations is not unjustly attributed to the insufficiency of the doses.

> "The proper doses will be found to be, for a delicate female, an ounce; for a robust female or a small man, an ounce and a half; for a robust man, two ounces. The best vehicle for it, is milk. It should be taken early in a morning, upon an empty stomach."—p. 229.

The twenty-second chapter contains an interesting detail of a very rare state of disease, the ulceration of the descending aorta; but the information it contains is more curious than useful. On *Nephritis*, nothing of importance is advanced. In *Diabetes*, the depleting plan recommended by Dr. Watt, is highly extolled; and one case detailed, in which it was attended with complete success, as far as it was carried. This patient, who was destroyed while under cure, by drinking nearly a pint of undiluted alcohol, was opened, and a hydatid found in the right kidney, of the size of a hazel nut. Mr. Bedingfield inquires, "How far might the hydatid, in the right kidney, prove an exciting cause of the disease?" and remarks, that dogs, who make large quantities of urine, are subject to hydatids in the kidnies.

The twenty-fifth, and last chapter of this section, is intitled, "*On the Functions of the Kidneys.*" Our author's opinions on this subject are marked by the same affectation of singularity, as characterizes those on the other functions of which he has occasion to treat. He cannot allow himself to regard the urine as merely an excrementitious fluid; but because absorption takes place from the surface of the bladder, he conceives that the watery part taken up may possibly "contribute towards the formation of the tears, the saliva, the perspiration, and several other secretions." It is surely unnecessary, seriously, to refute this hypothesis; we would only observe, that in admitting it, a degree of imperfection of the lachrymal and salivary glands must be also supposed.

The fifth section comprehends *the Diseases of the Pelvic Viscera.* In an irritable state of the inner membrane of the bladder, besides topical bleeding, the warm bath, and the injection of milk and water into the bladder, the liquor potassæ is recommended "in doses of from six to twenty drops three times a day." If this medicine be intended to act on the bladder, and act there as an alkali, the doses here indicated are much too small, and scarcely sufficient to neutralize the acid found in the majority of stomachs. We find nothing new in the chapter "*On Affections of the Stomach*," except that the application of henbane ointment is strongly recommended in the painful state of hæmorrhoids. The third chapter, "*On Affections of the Uterus*," comprehends *Hysteria* and *Emansio Mensium* only; while *Ammenorrhœa* and *Menorrhagia* have distinct chapters allotted to them! but neither these nor the chapter on *Leucorrhœa*, merit any particular notice.

The Sixth Section treats of "*Affections of the Spine.* In the first chapter, some severe observations are made on what the author supposes to be not unfrequent, an imposition practised by surgeons in pronouncing the spine to be diseased when that is actually not the case. Confinement, and sometimes issues are prescribed; and if, he adds, "the health of the patient be not destroyed in a reasonable time, she is declared to be cured of the disease, and allowed to get up." We did not suspect that such practices existed; and for the sake of the profession, we trust they are very rare. When the spine is actually diseased, besides rest and leeches, bark, carbonate of ammonia and muriate of lime, are highly extolled.

The second chapter contains an interesting case of fracture of the fourth cervical vertebra; and some judicious hints are thrown out as to the possibility of saving patients under such circumstances by an operation.

> "It may, perhaps, be urged against an operation, that it is impossible to determine whether the medulla be torn or not. It is a common practice, to destroy animals by dividing the medulla. They die almost instantaneously after the operation. Almost as sudden will be the death of a patient, where the medulla (as it is passing along the cervical vertebræ) is wounded; but where it is simply compressed, the patient may survive hours, or even days, as in the case above related.
>
> "A force sufficient to fracture the body of one of the superior cervical vertebræ would inevitably destroy life at the same time; but a less degree of force would be capable of breaking off the processes of the vertebræ, and driving them upon the medulla. If they be suffered to remain there, the patient will inevitably die; if they

be elevated, he may live. Whenever, therefore, a superior dorsal or cervical vertebræ is fractured, an examination of the parts should be made, if the patient survives a few hours. It cannot possible do harm, and affords a prospect of success."—p. 267, 268.

The first chapter of the seventh section is intitled, *Theory of Fever*. It, however, contains no theory of fever, which the author prudently conceives, "as it has baffled the powers of the most distinguished medical philosophers," is much above his comprehension: he, nevertheless, ventures to hint, that as, in all fevers, there is a determination of blood to some particular organ, "fever is an effort of the *vis medicatrix naturæ*, to free the oppressed organ from the superabundant blood." We leave our readers to make their own comments. With more reason he maintains, that all fevers are primarily inflammatory; and, therefore, instead of dividing them into inflammatory and typhoid, a more correct division would be into *contagious* and *non-contagious*.

The second chapter treats of *Typhus*; not less than one hundred genuine cases of which were admitted into the Bristol Infirmary in five years; and of that number, not more than twelve died. Our author conceives, with Dr. Clutterbuck, that the seat of genuine contagious typhus is the brain; and that when other organs are the parts inflamed, although the fever induced may resemble typhus, yet it never proves contagious. He divides the treatment into three stages.

"In the first stage, we are to administer emetics, and employ venesection. In the second stage, we are to moderate the re-action of the system, by the admission of cool air, sponging the body, &c.; and by emptying the bowels, by administering calomel, in combination with antimonial powder. In the third and last stage, we shall more frequently benefit than injure the patient, by giving him wine, broths, &c."—p. 227.

In the chapter on *Intermittents*, we have only to notice the statement that the morbid catenation of action has been broken by putting the patients "under a copious shower-bath," in the hot stage of the paroxysm. When cinchona is administered, fifteen grains combined with five grains of ginger, are said to be equivalent to half a drachm of the bark alone. But our author prefers the arsenical solution; and adds, "I have never known arsenic to fail."

The chapter on *Scarlatina* contains a curious case, in which the disease was complicated with inflammation of the larynx, trachea, and bronchiæ, and proved fatal. We are rather surprized that no notice is taken of the use of the cold affusion in this disease. We have had numerous proofs of its efficacy, if employed in the evening of the first and second days of the eruption, when the temperature of the body is high, and the skin feels dry and pungent. As our author observes of the shower-bath in the hot stage of the intermittent, it seems to break the chain of diseased action; and to bring on a critical diaphoresis.

Our author's remarks on *Rubeola, Pertussis, Variola*, and *Vaccination*, are extremely brief, and contain nothing novel; nor is the chapter on *Syphilis* more important. On the subject of *Erysipelas*, from the excessive vascular action which the brain and the affected parts exhibit, when the disease proves fatal, the depleting plan of treatment has been successfully adopted in the Bristol Infirmary. Blood is taken freely from the arm, and a constant evaporation from the inflamed parts kept up, by means of alcohol and water. We have witnessed the efficacy of this practice in vigorous habits; but in old and infirm constitutions, we believe we must depend on bark and opium.

Of the title, *General Affections*, of the eighth and concluding section, we have already spoken.

The first chapter, on *Diseases of the Skin*, contains a very sweeping observation of the author, that much more has been written on this subject than is practically useful; and in pursuance of this idea, he arranges all cutaneous diseases under two heads, *indolent* and *irritable* eruptions. The former he treats with mercury; the latter, with "an ointment which has henbane for its basis." The only remark which suggests itself, is, that our author has, in this instance, indulged himself in giving an opinion on a subject of which his experience has been too limited to enable him to form a judgment. The three following chapters are on *Anasarca, Sphacelus*, and *Scrophula*; and the last treats of *Acute* and *Chronic Rheumatism*. In the acute form of *rheumatism*, Mr. Bedingfield recommends copious venæsection, active purging, and the application of cold, acetous, and spirituous lotions, to the painful parts. "When twenty, thirty, or forty ounces of blood have been taken away for three or four days in succession, cases of the most violent description have been very speedily cured." Bark, as far as his observation extends, "has been generally injurious." Now, as far as our own experience can guide us, we make a directly opposite conclusion: we have not found much benefit from bleeding, except in very plethoric and vigorous habits, whilst we have experienced the greatest advantage from the employment of the cinchona, particularly when the accessions are periodical, which is the case in nine instances out of ten. In the chronic form of the disease, the arsenical solution, the warm bath, and active purgatives, are recommended; or, if these fail, the exciting a slight mercurial action in the system. Very obstinate cases are said to have been cured by giving a scruple of calomel twice a week, which, however, must be discontinued for a week or two, when the gums become slightly affected.

The few remarks with which we have accompanied our analysis, have already put our readers in possession of our opinion of the general merits of the work we have just closed. It is too compendious, particularly in the detail of symptoms, to afford much instruction to the student, or assistance to him in his first steps in practice: but, as a collection of memoranda it will be found useful to the formed practitioner, in pointing out the effects of certain lines of practice when tried on a great scale. Mr. Bedingfield's labours merit our approbation: but the dogmatic manner in which he delivers his opinions is very reprehensible. He has yet to learn, that much medical knowledge and good practice is to be found without the walls of the Bristol Infirmary: and, that the publication of crude or absurd physiological speculations is very apt to bring into contempt even the sounder opinions of their author.

II.

Essai sur l'Emploi de la Résection des Os, dans le Traitement de Plusieurs Articulations affectées de Carie. Par M. le Docteur Moreau. 8vo. pp. 111. Paris, 1816.

The facts contained in this pamphlet are of sufficient importance to claim attention; and the author has detailed them in a way to give us confidence in the accuracy of his observations. In England, the excision of joints has not been practised to the extent which might have been expected from the success that has attended these operations in the hands of several eminent surgeons; and the same remark may with justice be made respecting this part of surgery in France. In both countries, however, the head of the os humeri has been removed in numerous instances. The reasons why this joint should, in preference to all others, become the subject of such operations, are very obvious, and arise from the nature and extent of the disease, as well as from the form and situation of the joint. Diseases in the knee and elbow are readily removed by the simple operation of amputation. When the head of the os humeri, as very often happens, is diseased without the scapula being involved, amputation at the shoulder-joint is a formidable operation to undertake; and even this operation is insufficient in cases where the disease has extended to the scapula.

The following method of excision of the shoulder-joint is proposed by Dr. Moreau. The patient is seated on a chair, with the arm, if it be possible, raised to a horizontal position. The first incision is commenced near the coracoid process, and be continued for three inches along the external [anterior] edge of the bicipital groove, the scalpel being introduced perpendicularly down to the bone at the commencement of the incision, and both skin and deltoid muscle cut through at the same time. An incision parallel to this is made in the same manner on the opposite side, beginning at the extremity of the inferior edge of the acromion process. A transverse incision, passing just below the eminence of the acromion, unites these two at their upper extremity; and the flap, consisting of skin and deltoid muscle, is dissected, and turned back upon the arm. The posterior circumflex is then tied, and the arm, being depressed against the side, the capsular ligament and the tendons covering the head of the humerus, externally, are divided transversely. The knife can now be introduced between the head of the bone and the glenoid cavity, and the connexions of the former with the muscles and the scapula separated. In proportion as the diseased head of the bone is detached, it is made to project through the wound, by pushing upwards the elbow which is still kept close to the side. The soft parts are protected and pulled aside by a compress in the hands of an assistant; and the head of the bone being seized by the left hand of the operator, is slowly cut through with a saw in his right. If the disorder is confined to the head of the bone, the operation is finished; the flap of skin and deltoid muscle may be re-applied, and secured with sutures at the two angles. But if the caries affect five or six inches, it may be necessary to continue the longitudinal incisions further down the arm, and to make the flap larger, in order to get at it. If the acromion process, or the glenoid cavity of the scapula participate in the disease, the anterior longitudinal incision is prolonged over the humeral extremity of the clavicle, and the posterior towards the spine of the scapula, so as to make a fresh flap opposite to the first.

In the first case which Dr. Moreau has related, the operation was done in this manner:—The patient was a female, forty-five years old, with caries of the joint of ten months duration. The shoulder was much swelled, with an ulcer on the anterior part, resulting from an abscess which had been opened some days before. The arm, down to the hand, was œdematous, and could not be raised without excruciating pain. Appetite and sleep were absent. Besides the head of the os humeri, the whole of the angle of the scapula forming the glenoid cavity, and a part of the acromion, were removed. In the operation, the deltoid, the long head of the biceps, and the tendons inserted into the tuberosities of the head of the bone, were cut through. The cure was perfect, a depression remaining, as when the joint is luxated. The upper end of the humerus was fixed against the ribs, anterior to the margin of the scapula, so as to form a false joint. The arm was shortened two inches, and could be moved backwards and forwards, but not elevated, nor removed more than a few inches from the side. When the arm was fixed to the side, the patient enjoyed every advantage of the elbow joint in the motions of the fore-arm.

In the second case there were two fistulous openings, and the head of the os humeri could be felt here with the probe. The caries, the author says, had succeeded, and an abscess formed, without any known cause, in the medullary cavity of the bone about a year before. The disease was confined to the humerus, above five inches of which were removed; the head of the bone was so enlarged, and the anterior edge of the bicipital groove so prominent, that the operation was long and difficult. The cure was complete at the end of two months. The arm was shortened only an inch, the upper end of the humerus remaining separated from the scapula, without any fixed point of support. Although very little power remained of moving the arm in different directions, when exerted perpendicularly, as in raising weights, it was as strong as the other.

The third case is analagous to the preceding. The disease originated from a gun-shot. Four inches of the humerus, being carious, were removed: the scapula was unaffected. The recovery occupied three or four months. Two other cases are also related, to shew the safety of the practice; but, in one of them, although circumstances seemed so favourable as to promise a better result, only a temporary cure was obtained. Five inches and a half of the upper extremity of the bone had been removed; the disease, after an apparent cure of a few months' duration, returned in the remaining portion of the bone, with abscesses and fistulæ, ending in the death of the patient.

The operation of removing a part of this joint requires, without doubt, to be varied according to circumstances. A simple longitudinal incision, and the protrusion of the extremity of the os humeri, between the fibres of the deltoid muscle, as practised with much success by White, will answer very well where only the head of the humerus is to be removed; but the same method is not applicable to cases where many inches of that bone, or portions of the scapula, require to be taken away. The extent of the disease can hardly be ascertained before the operation is undertaken; and the advantages of Dr. Moreau's plan rest chiefly on the operator having it in his power to obviate the ill effects that might arise from this uncertainty.

From his own experience, and the cases that have been described by others, Dr. Moreau is led to enumerate three situations in which the upper extremity of the humerus may remain, after the removal of a portion of it:—1st, it may be brought back into the glenoid cavity; 2dly, it may be drawn towards the ribs, in front of the external [inferior] margin of the scapula; 3dly, it may remain at a distance from the trunk and scapula, surrounded by the soft parts. The first occurrence, in which the joint nearly regains its original integrity, may be expected to take place, when the tendons of the subscapularis muscles inserted into the tuberosities of the head of the bone remain, to keep it approximated to the glenoid cavity. When not only these tendons are cut through, but also those of the latissimus dorsi and teres major, and pectoralis major, which are inserted at a distance from the joint, so favourable a termination cannot reasonably be hoped for.

Mr. Park proposed excision of the elbow-joint, but practised it only on the dead subject; and some experiments, instituted by M. Chaussier, on animals, to ascertain how far such an attempt might be adviseable, proved, that in hinge-joints no adequate advantage could be derived from so difficult an operation*. There is much fallacy in reasoning from experiments on animals upon such a subject; and experience has proved that the suggestion of Mr. Park was judicious, and the conclusions of M. Chaussier erroneous. Dr. Moreau, in the pamphlet before us, gives several cases in which the elbow was removed. To perform the operation, the patient should be laid on a table with his face downwards. The arm is brought to a right angle with the trunk, and a tourniquet applied for security against hæmorrhage. The fore-arm being in a state of semiflexion, the posterior part of the elbow is presented to the operator, who introduces the scalpel perpendicularly, and makes an incision three inches in length in the direction of the spine which leads from each condyle of the humerus. The two incisions thus made are united by cutting transversely the skin and the tendon of the triceps extensor muscle, just above the olecranon. By this means a quadrilateral flap is made, which must be detached from the bone and turned back upon the arm. The brachialis internus muscle is next detached from the anterior surfaces of the humerus, and an ivory spatula insinuated between the bone and the flesh, to serve as a retractor, whilst the bone is sawed through. This part of the operation is to be finished by depressing the fore-arm, and detaching the articular portion of the humerus from all its adhesions. But if the radius and ulna are carious in their articulation with the humerus, a second flap must be formed. In this case, the fore-arm must be elevated, and an incision an inch and a half long made on the external border of the upper end of the radius, and a similar one on the posterior border of the ulna. By dissecting back the flap included between these two parallel wounds, the radius is freed from the adhering soft parts, and a silken fillet being passed between it and these, which will serve as a retractor, whilst the bone is cut through with a small saw. Care should be taken to preserve, if possible, the insertion of the biceps muscle into the tubercle of the radius. After the same manner, the superior extremity of the ulna is to be detached and sawed through, the insertion of the brachialis muscle into the coronoid process being wholly or in part preserved.

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* *Memoires de la Société Medicale d'Emulation troisième année.*

After the healing of strumous ulcers in the neck, the patient, whose case is first related by Dr. Moreau, experienced a swelling of the elbow, followed by abscesses and fistulæ. Seven months from the commencement of the disease, the joint was found carious, and a thin reddish discharge was furnished by three fistulous openings. The soft parts were swollen and œdematous, and the bony surfaces of the joint gave an audible crepitation when the fore-arm was moved. The operation was performed in the manner already described. The bones were extensively carious, the cartilaginous surfaces eroded, and the joint filled with fungous substances and purulent matter. The portion of the humerus removed was three inches long; that of the radius, five-sixths of an inch; and that of the ulna, an inch and three quarters. The biceps muscle remained uninjured; the supinator radii longus was not wholly detached from its origin; and the brachialis internus retained a part of its insertion into the coronoid process. The recovery was slow, but perfect. When the joint was examined, three years afterwards, the limb was smaller, and three inches shorter, than the other; and the radius and ulna were separated from the humerus by a considerable interval; the arm could be firmly bent; and was sufficiently strong for the patient to use it in threshing in a barn. The fingers had full power of motion, but the little finger had no feeling.

The second case which Dr. Moreau details presented this state of insensibility of the little finger after the cure; and the back of the hand, towards the ulnar margin of it, was a little wasted; symptoms which are evidently owing to the ulnar nerve having been divided during the operation; a circumstance which is unavoidable in performing it according to the plan described*. In support of the practicability and advantage of the operation, three other cases are also given; in two of which only a portion of the articulating surfaces of the humerus was removed, without the ulnar nerve being divided.

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* Although by this unavoidable accident, observes Dr. Moreau, the little finger is for ever after insensible, and one side of the finger next to it benumbed, the fingers recover all the mobility which they enjoyed previous to the operation.

From the account which Dr. Moreau has given of this operation, little can be comprehended of the pain and difficulty that must attend the performance of it. The patient is required to be possessed of confidence and fortitude; and the surgeon to be firm in operating, and well versed in anatomy. Under these circumstances, and a favourable state of the patient's constitution, the removal of the elbow-joint seems to be as exempt from dangers as any important operation that we are in the habit of performing.

Experience does not say so much in favour of excision of the knee-joint. This was first suggested and performed by Mr. Park; the corresponding ends of both femor and tibia being removed. The patient, after a tedious cure of eight months, had a stiff and shortened limb, the cut surfaces of these two bones having become joined and consolidated. In the only other case in which Mr. Park attempted the operation, the patient died from the effects of it. The two cases of this kind, contained in Dr. Moreau's book, are not calculated to make us sanguine in recommending future trials of the operation. In the first case, union between the tibia and femur seemed to have taken place at the end of three months, and the patient was expected soon to be able to walk with crutches, when his death, by an epidemic disease that accidentally prevailed, put an end to all the surgeon's hopes of success. In the second example, the limb became shortened, so that the surfaces of the femur and tibia were in contact with each other; but bony union between them never took place; and three or four years after the operation, the patient could not walk out of doors securely without the assistance of a crutch.

Dr. Moreau's book contains a chapter on removing the bones of the ankle-joint. In two cases of compound dislocation of this joint, with fracture of the fibula, where, from neglect or bad treatment, the end of the tibia was still protruding through the wound several months after the accident, and amputation must otherwise have been performed, the ends of both tibia and fibula were removed*, and the patients cured with the enjoyment of considerable motion between the foot and the leg. The success attending the first of these cases, suggested to the father of Dr. Moreau a similar operation in caries of the same joint; and three examples are recorded in which his suggestion was put in execution. In two of these examples, the astragalus, being carious, was removed, as well as the ends of the tibia and fibula; after a tedious length of time, the wounds were healed; and a tolerable use of the limb, without any motion between the bones of the leg and foot, was obtained. The last case appears most worthy of imitation. The patient, after a sprain in the ankle, suffered pain in it for two years. Caustics, moxa, baths, and mercurial friction, were tried with an aggravation of the complaint. The external ankle swelled, and an abscess opened, leaving a sanies, which led to the carious end of the fibula. Remedies were still tried without success. A flap was made so as to expose the lower end of the fibula; a part of which, including a portion of its articulating surface, was removed. The exact time at which the wound was healed is not specified; but there was no interruption to the progress towards a cure, and all the movements of the joint remained entire.

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* In one of these cases, the anterior tibial artery was wounded and tied.

This practical writer concludes his pamphlet with a few general remarks on the removal of carious bones of the wrist and tarsus, without giving the history of particular cases.

We have brought this treatise before our readers, not so much on account of its novelty, as to draw attention to a part of surgical practice which seems to have been rather neglected —the excision of the joints of the shoulder and elbow. It has been mentioned with regret by a most judicious author*, that the removal of the head of the humerus has very rarely been undertaken by our military surgeons, and that a similar operation on the elbow-joint has not been had recourse to; although cases, to which each of these operations are applicable, and where the limb might have been saved by their adoption, must have frequently occurred.

The method of performing these operations is not the only thing to be considered; it is desirable to ascertain the principle which is to direct us in undertaking them. Diseases of joints, followed by caries in the heads of bones, often commence in the soft parts; and in these cases, the removal of the bone, which is only subsequently affected, seems not so likely a mean of cure, as in those instances, where the articulating extremity of the bone, or the cartilage covering it, has been the primary seat of the diseases. The want of success from this source, however, cannot easily be obviated in the present state of our knowledge. Much as the admirable investigations of Mr. Brodie have contributed to illustrate the pathology of joints, and the application of remedies, the diagnosis cannot be established with sufficient certainty to enable us to profit by it in advanced stages of these complaints, the only period at which the performance of a serious operation is contemplated.

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* Guthrie *on Gun-Shot Wounds.*

III.

Materia Medica of Hindoostan, and Artisan's and Agriculturist's Nomenclature. By WHITELAW AINSLIE, M.D. Superintending Surgeon of the Madras Establishment. 4to. p. 349. Madras, 1813.

OUR readers will recollect, that some time ago, we published an extract* under the head of SELECTIONS, from this interesting work. We have now to apologize for having allowed it to remain so long unnoticed; for although it loses some of its interest in this country, yet it is of sufficient importance to lead us to expect, that when it is reprinted it will be put into the hands of those young men who are destined to watch over the health of our countrymen in the East. The volume does not admit of a regular analysis of its contents; we shall, therefore, merely make such selections from the different parts of it as may enable our readers to form a correct idea of its nature and execution.

The whole work is divided into two catalogues: the first of which contains the *Materia Medica of Hindoostan*; and the second, the *Artisan's and Agriculturist's Nomenclature*; to which is added an *Appendix*. It is the first of these divisions only which properly comes under our observation. The first section contains those articles of the British Materia Medica which are found in Asiatic countries, and many of which are in common use amongst the Indian practitioners.

The most curious circumstance in this section, is the description of the methods by which some of the compound substances are prepared. Thus with regard to the mineral acids, the sulphuric is prepared nearly in the same manner as in Europe; but the nitric and muriatic as follows:

"ACID, NITROUS†. *Pottle Ooppoo trāvagum*, (TAM.)—*Shora ka Teezub*, (DUK.)—Acidum nitrosum.

"The Vytians prepare this in the following manner: take of Pottle Ooppoo, (Salt petre) twenty pollums‡; Paddicarum, (Alum) sixteen pollums; Cadalay poolippoo neer, eighteen pollums.

"Mix and distil with an increasing heat, until the whole of the nitrous acid is condensed in the cooppie (receiver).

"The native practitioners consider Pottle Ooppoo trāvagum as a diuretic; they also prescribe it as a tonic after long continued fever.

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* Vide *Repository*, vol. iv. p. 410.

† In the original, the synonyms are printed in the characters also of the Tamool, Telingoo, and other Oriental languages; but these we conceive it is unnecessary to copy.

‡ A pollum is 520 grains Apothecaries' Weight.

" ACID, MURIATIC. *Ooppoo trāvagum,* (TAM.) — *Némuck ka Teezab,* (DUK.)—*Lawana Trāvagum,* (TEL.)—Acidum muriaticum.

" Take of Ooppoo, (common Salt) eight pollums; Paddicarum, (Alum) six pollums; Cadalay poolippoo neer, eight pollums.

" Let the common salt be first well dried; then add the other two ingredients, and distil until the whole of the muriatic acid is disengaged and condensed in the cooppie.

" This is considered by the native practitioners as a stomachic and tonic; and is prescribed in conjunction with an infusion of spices."—pp. 1-2.

The last article of both these formulæ, *Cadalay poolippoo neer,* is dew, rendered slightly acid by being caught on clothes spread over the Cicer *arietinum,* whilst growing. " The liquor when wrung out of the clothes, is recommended by the Vytians as a cooling drink, and is used by them as a common menstruum for medical purposes;" in the instances under consideration, it can only serve as distilled water.

The Vytians prepare ammonia in the same manner as in Europe. They procure potass also in a similar manner from the ashes of burnt vegetables; but the carbonate of soda is obtained from two natural saline earths, named *Over Munnoo* and *Poonheer,* probably resembling the *Trona* of Tripoli.

Under the article *Aloes,* Dr. Ainslie informs us, that that substance is " applied externally round the eye, in cases of chronic ophthalmia," by the native practitioners; who also employ the bruised leaves of Asarabacca in the same manner, and for the same complaint.

The arrow root, known in England, is prepared from the root of the Maranta *arundinacea ;* but a fecula, equally good, is stated to be " now prepared in the Travancore country, from the root of the Curcuma *angustifolia."*

The following account of the Acorus *calamus,* shews the value the Indian practitioners put upon this remedy, which has been most unaccountably neglected in this country. From our own experience we can assert, that its tonic powers are not much inferior to those of the cinchona, while at the same time its aromatic qualities render it a much more useful remedy in debilitated states of the stomach.

" SWEET FLAG, ROOT OF. *Vāssumboo,* (TAM.)—*Butch,* (DUK.) — *Vudge,* (PERS.) — *Bach,* (HIND.) — *Vachá,* (SANS.) — *Igghir,* (ARAB.)—*Vudzū,* (TEL.)—ACORUS CALAMUS, LIN.

" This is a favourite medicine of the Indian practitioners; and is reckoned so valuable in the indigestions, stomach aches, and certain bowel affections of children, that there is a penalty incurred by any druggist who will not, in the middle of the night, open his door, and sell it if demanded. It grows in many parts of these provinces. Rheede tells us, that, on the Malabar Coast, the *Acorus Calamus* is termed *Vaembu,* and that a bath made with an infusion of the root of it is there supposed to cure the epilepsy in infants. The Arabians place this article amongst their *Mobéhyát* (Aphrodisiaca)."—p. 45.

Dr. Ainslie believes, that the Datura *stramonium* is not to be found in Hindoostan. Speaking of the Datura *fastuosa*, he observes,

> " I have been at much pains to inquire, amongst the Vytians of this district (Trichinopoly), whether the root of the *Karoo Oomatay* is ever recommended by them to be smoaked in cases of spasmodic asthma, in the manner administered at Ceylon and in the more northern parts of the Carnatic; but, as far as I can discover, they are totally unacquainted with its virtues in this disease; indeed, they prescribe it very cautiously internally, on any occasion. In those violent and deep-seated head aches, which often precede epilepsy and mania, the Hakeems sometimes order the root of it, when dried and powdered, in very small doses; and I have understood, with considerable success; a practice they have, in all probability, learnt from the writings of *Moomina*, who treats fully of the datura. I cannot conclude what I have to say on this subject without observing, that the juice of the fruit has a powerful inebriating effect; and that the Hindoo practitioners employ the succulent leaves and fruit of the plant in preparing, (in conjunction with warm cow-dung,) a poultice for repelling certain tumours, called *Kundāmālie* (scrophulous) and *Mooléi poottoo* (cancer); they also suppose, that the seeds, made into pills, or lozenges, and laid upon a decayed tooth, deaden the pain of the tooch ache; a fact I was much pleased to perceive noticed in the second volume of Lockman's Travels of the Jesuits, page 361."—p. 48.

The second Section of the first Catalogue treats of *Metallic Substances*, which, as far as their medicinal properties are concerned, are employed nearly in the same manner as they were in Europe in the seventeenth century. The third Section contains the *Medicines of the Tamool Materia Medica*, many of which are used by the Telingas and Mahometans, but few by the European practitioners.

In the preface to this section a short account is given of the medical art (for it cannot be denominated science) of Hindoostan, which is still in a great degree empirical. Like all the other arts known there, it forms part of the sacred writings of the Hindoos, the *Ayurvéda*, one of the books of the immortal *Védas*, which is said to have been originally delivered to mankind by *Bramah*, *Indráh*, *Darwántrie*, and five other deities, containing the theory of diseases and their remedies. There are many commentaries on this book of great antiquity, composed by prophets (*Mágha** *Reeshés*), from which the Vytians, who are the physicians of Hindoostan, obtain their information; for being *sudras*, they

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* We were struck with the similarity of this term and *Magus*, the name given to a prophet and physician in Egypt.

to peruse the sacred writings. These com-
verse, very mystical, and "betray a woeful
l economy; but this is less remarkable
owledge of anatomy. They never-
emarks, of which the following
Aghastier Vytia Anyouroa, a work
our author is a striking example.

tiquity have thus handed down to us the
considered requisite to constitute a good phy-

e a person of strict veracity, and of the greatest
ecorum; holding sexual intercourse with no woman
wn wife. He ought to be thoroughly skilled in all the
aries on the *Ayurvéda*, and be otherwise a man of sense
evolence; his heart must be charitable, his temper calm, and
onstant study, how to do good. Such a man is properly called
good physician; and such a physician ought still daily to improve his mind by an attentive perusal of scientific books.

"When a sick person expresses himself peevishly or hastily, a good physician is not thereby provoked to impatience; he is mild, yet courageous; and cherishes a cheerful hope of being able to save his patient's life: he is frank, communicative, impartial, and liberal; yet, ever rigid in exacting an adherence to whatever regimen or rules he may think it necessary to enjoin.

"Should death come upon us under the care of a person of this description, it can only be considered as inevitable fate, and not the consequence of presumptuous ignorance."—p. 63, 64.

Dr. Ainslie successfully refutes Sonnerat's attack on the Hindoo practitioners; and shews that, with some exceptions, they possess much of the information of their country, "are in general men of polite manners, liberal-minded, and humane." Surgery is not professed by the Tamool, or Telingoo doctors, and is at the lowest ebb in Hindoostan.

The catalogue of Tamool remedies is very copious; but few of the articles are employed by the English inhabitants of India. Among those which have been adopted, we find the Plantago *ispaghul* (Roxb), under the Tamool name *Ispaghol vérëi;* the seeds of which, in infusion, yield a mucilage which is used in gonorrhœa, cattarrh, and nephritis: the root of the Sida *lanceolata*, *Mālaytānghie vayr* (Tam); which, in infusion with ginger, is regarded "as an useful remedy in chronic bowel affections:" and the Cotyleden *laciniata*, *Zukkam hÿat*, in the Dukanie tongue, the bruised leaves of which are applied to foul ulcers: and Dr. Ainslie adds: "I can speak of their efficacy from experience." The account of the preparations of mercury is extremely interesting; but as it does not admit of abridgement, we cannot lay it before our readers. The other parts of the volume relating to medicine, are:—A table, shewing the doses of such Tamool medicines as are not included in the British Materia Medica; weights in use among the native druggists of Lower Hindoostan; and forms of prescriptions in use amongst the native medical practitioners of Lower Hindoostan.

The extracts which we have given are sufficient to afford our readers some idea of the nature of the work, which we have already observed does not admit of a regular analysis. Its chief value consists in the Nomenclature, or vocabulary of synonyms; which must be of the greatest use to European practitioners in India; and the formation of which is highly creditable to Dr. Ainslie's industry and talent as an oriental linguist. As we understand he has some idea of publishing a second edition in this country, we would hint the advantage of extending the notices of the articles, as far as regards their natural history; much of the information on which would be original, and highly interesting to the English reader.

PART III.

SELECTIONS.

Extract from an Essay on the Bad Effects of the Incautious Use of Magnesia. By Everard Brande, Esq.

A lady was recommended to take magnesia, in consequence of some very severe nephritic attacks, accompanied with the passage of gravel. She was desired to take a tea-spoonful every night; and Henry's calcined magnesia was preferred, as that always operated upon the bowels and "carried itself off," which other magnesia did not, but, on the contrary, felt heavy and uneasy in the stomach. The dose was gradually increased to two tea-spoonfuls, in order to produce effect upon the bowels, which this quantity never failed to do; the symptoms for which it was ordered were soon removed, but the plan was persevered in for two years and a half, with little intermission or irregularity; so that as the average weight of a tea-spoonful is at least forty grains, and the average dose was a tea-spoonful and a half, it may be presumed that she took during the above period between nine and ten pounds troy.

In the course of the last autumn she suffered severely by a miscarriage, and shortly afterwards by an attack of biliary calculi; subsequent to which she became sensible of a tenderness in the left side just above the groin, connected with a deep seated tumour, obscurely to be felt upon pressure, and subject to attacks of constipation, with painful spasmodic action of the bowels, tenesmus, and a highly irritable state of stomach; these attacks recurred every two or three weeks, varying in violence, but requiring the use of active remedies; during one of them, about the middle of last March, a large quantity of sand was voided by the rectum, attended with a peculiar acute and distressing pain in the seat of the tumour above mentioned. This was lost. The following day, however, the same kind of evacuation happened again, and to the same extent, which being saved and measured, was found to amount to two pints. Another attack took place upon the 5th of April, when several irregular lumps of a soft light brown substance were voided, having the appearance of a large mass broken down, and when dry extremely friable: a part of each of these two last were subjected to a careful analysis, and found to consist entirely of sub-carbonate of magnesia concreted by the mucus of the bowels, in the proportion of about 40 per cent.

The use of magnesia was now given up, and that of an active purgative medicine enjoined, with some other necessary directions, and there is every appearance of returning health, although some slight attacks have recurred, and small portions of the same concretion still occasionally come away.

An instance, in many respects resembling this, has lately occurred in the practice of some gentlemen of eminence in this town, in which not only large quantities of a concretion of a similar description were voided, but upon examination after death, which took place perhaps six months after any magnesia had been taken, a collection, supposed to be from four to six pounds, was found embedded in the head of the colon, which was of course much distended. Some notes which were made of this case are, I fear, not to be found.—*Journal of Science and the Arts*, vol. i. p. 299.

PART IV.

FOREIGN MEDICAL SCIENCE AND LITERATURE.

PRACTICE OF MEDICINE.

I.—Syphilis is occasionally observed in infants, and it becomes a question of some importance to ascertain, whether, in the event of the nurse not being the mother of the child, the disease has been communicated by the child or the nurse. The following paper, by *M. Cullerier*, which was read to the Société de Médecine de Paris, in January last, is drawn up expressly with the view of laying down rules by which the fact may be determined. In translating it we have left out such of the cases as appeared the least important. The paper is intitled "*Observations sur la Contagion Syphilitique, dans les Rapports des Nourrices avec les Nourrissons.*"

" Symptoms of syphilis are often observed in infants many days, weeks, or months, and sometimes even years, after birth; and it frequently happens that the disease is communicated by an infant to the nurse by whom it is suckled. In the hospital *Des Veneriens* nurses are occasionally found who have been affected in this manner: but it is, also, not uncommon to see nurses who, either by their own misconduct, or that of their husbands, have communicated to their nurslings the virus with which they are tainted. I am occasionally consulted, both by nurses and the parents of nursed children, regarding this disease, and to decide whether the infant or the nurse have communicated it. The following observations are intended for the government of those who may be required to decide in cases of this description, particularly when they are brought into a court of justice. I will commence with a case which is still pending in one of the civil tribunals of Paris.

" *Case first.*—About three months ago the President of the Court *des Vacations* brought before me, at the request of the counsel of the parties, a nurse with her nursling, to be examined as to the state of their health. I made the following report.

" ——— certifies having found upon M** C**, the wife of M**, a nurse—1°. some blotches upon the breast, of a bright brown colour;—2°. others nearly of the same hue, some of which were covered with thin scales, on the right side;—3°. three or four spots resembling the preceding, with a small tubercle, at the posterior part of the neck;—4°. seven or eight small, widely scattered blotches on different parts of the body: and he is of opinion that these blotches, the scaly spots, and the tubercle, are the probable symptoms of the existence of a secondary syphilis. I added that the nurse had assured me that she had had ulcers in the mouth and on the breasts; but I could perceive no traces of them.

" ——— certifies that the infant of Sir and Lady L**, the child nursed by M**, aged about one year, has—1°. a round superficial ulcer on the inside of the upper lip, near the frænum;—2°. another foul ulcer, nearly circular, and of two or three lines in diameter, situated on the perinœum; and that these ulcers present the characteristics of those of a primary venereal affection.

" ——— certifies finally that not having seen the disease in its commencement, either in the nurse, her husband, the infant, or its parents, it is impossible to decide positively whether the infant communicated or received the infection.

"The tears and asseverations of the nurse interested me in her favour; but the symptoms were such as to raise doubts in my mind, which I was anxious to remove; and therefore I examined the parents, on whom I could discover no signs either of a present affection, nor cicatrices of past disease.

"At the first visit, the nurse informed me that one of her daughters, a girl fourteen or fifteen years of age, had a sore throat, which she supposed she had caught from kissing the infant. I regretted that I could not examine her, as she was left at home, a distance of seven or eight leagues from Paris. About three weeks afterwards, however, the nurse and her daughter were brought to me by a legal warrant. The former appeared in a state of health; but on examining the mouth of the daughter, I found the amygdalæ ulcerated: and on the left labium pudendæ, a large tuberculous pustule. If I had made no further inquiries, there was reason for concluding that the disease was communicated rather by this girl than by the infant; and this conclusion was confirmed by an examination of the vulva. I found some small ulcers on the interior of the nymphæ; the hymen was lacerated; and the entrance of the vagina was of a size sufficient to suggest the idea that the girl had had frequent sexual connection, which she afterwards confessed was the fact. From this discovery it was evident that the ulcerated mouth of the child had been produced by the reiterated kisses of the daughter of the nurse; and it was probable that the ulcer on the perinœum had proceeded from its having been moistened by her saliva, a custom which is not uncommon among nurses. I did not acquaint either the father or his counsel with my opinion; but requested that the daughter should be examined by my colleague before being admitted into the hospital *Des Veneriens*, where she wished to be placed. I saw no more of her.

"Where lay the culpability? On one hand, an infant a year old has two simple, superficial, primary ulcers; but the parents are free from any symptom of syphilis, or any mark of previous disease: on the other, the nurse has suspicious symptoms, or rather symptoms of a secondary affection. Her daughter has ulcers on the amygdalæ, a large pustule on one of the labia, and ulcerations on the nymphæ; and, although still young, bears evident marks of having had frequent sexual intercourse. Notwithstanding these proofs of culpability in the nurse's family, she pursued the parents of the child for damages. The opinion of the public, and that of the judge, was in favour of the guilty, merely because, said they, country folks are not corrupt enough to complain without a cause.

" *Case second*, is another instance of a child being affected, and the disease traced to the nurse.

" *Case third.*—M. M. Marchais and Hallé had attended Madam M——, and her infant: the one as an accoucheur, the other as a physician. This child, which was suckled at home by a Parisian nurse, had, a few months after birth, a gathering, and some slight ulcers in the mouth. Pus was discharged from the nose; the respiration became difficult and laborious, and the strength gradually decreased. The infant was in this state when I was requested to see it. Neither the physician nor the accoucheur had perceived any symptom of a venereal affection upon the parents; but the father acknowledged that he had had that disease before marriage; assuring us, however, that he had been completely cured. M. M. Hallé and Marchais had not perceived any thing on the infant for some months after birth, except a faint brown spot upon the scrotum, which almost entirely disappeared without any topical application.

" The nurse had some superficial ulcerations on the breasts and some mealy and scaly eruptions on the chest and arms. The genitals were not examined, as we were unwilling to awaken any suspicion; and, after the avowal of the father, and the brown spot on the scrotum, it was probable that the disease was hereditary. I was not, however, of this opinion, as I found the blotch on the scrotum insignificant; and, from the cutaneous affection of the nurse, I was persuaded that she had affected the child. It was, nevertheless, agreed, that my suspicions should not be hinted to the nurse, and that her disease should be called tetters (Dartres). The plan of treatment was agreed upon; but the infant, being too much exhausted, died, without having been able to take any medicine.

" The parents, being fully persuaded that the nurse had been the victim of a disease received from them, engaged her to remain with them after the death of the infant, to be cured of her tetters. She consented to this proposal, and I was desired to attend her. Before beginning, I requested to be made acquainted with the state of the whole body; but she objected, on account of the menses being upon her. Some days afterwards I renewed my request, when she again put off the examination for two days; and next day, having declared that she would go home, she thanked Mr. M. for all he had done for her, and proposed to do, but refused to wait upon me. She has never since re-entered her master's house. Would she have conducted herself in this manner, if she had not been culpable? It has since been ascertained that her husband, the driver of a fiacre, is an abandoned character.

" The *fourth case* resembles the third in some particulars.

The child died; and, although it was known that the husband of the nurse, and the nurse herself, had been lately treated for syphilis, until the symptoms had disappeared, yet the parents of the infant kept her for three months, until she was fairly cured; whilst they themselves remained in perfect health. M. Cullerier remarks, 'that every day's experience proves that the symptoms disappear spontaneously, although the virus still remains in the system.'

". *Case fifth.*—About two years ago, a nurse brought to me an infant, six or eight weeks old, upon the labia and anus of whom there were some incipient pustules. I informed her that the child had symptoms of a contagious disorder, and desired her to acquaint the parents with my suspicions. The genitals of the nurse were free from any diseased appearances, nor were there any upon the nipples. Eight days afterwards the nurse returned, and brought with her, her nursling, the father and mother of the infant, and a physician. The symptoms on the child had become less unequivocal, and some ulcers had appeared upon the breasts of the nurse. The parents wished to throw the blame upon the nurse, alleging that they were in good health, whilst she had ulcers upon her breasts: but I stated, that when she waited upon me, eight days before, the nipples were in a healthy state, although the nursling was evidently under the influence of the disease. They agreed to take the infant from her, and give her an indemnification, which she accepted; but the answer of the father to the questions which were put to him, explained the origin of the disease.

" I could relate many other cases of this kind; but they would be superfluous, and the relation would merely be a repetition of nearly the same circumstances.

" The conclusions which the facts authorize, appear to be, 1. That if the breasts of the nurse and the mouth of the child only are at the same time diseased, we ought not to give an opinion as to the origin of the disease until we have other evidences. 2. That if the breasts of the nurse only be diseased, whilst other marks of disease besides those in the mouth are apparent on the infant, it is very probable the complaint has been communicated by the child. 3. That if the infant has no disease except of the mouth, and other marks of it appear on other parts of the nurse besides the breast, it is very probable that the infant has imbibed the disease with the breast-milk. 4. That if the nurse have secondary symptoms, and the child primary only, the probability is, that the complaint has been communicated from the nurse, or some other person by whom the infant may have been kept. 5. That if the child have secondary symptoms, the disease is probably hereditary. 6. That in doubtful cases, nothing should be neglected which may lead to the discovery of the truth: by examining all the concomitant circumstances, the veil may be generally removed; although it is sometimes necessary to temporize, and to do nothing precipitately."

MATERIA MEDICA.

II.—MR. MARTIUS, of Erlangen, has made copious researches into the origin, history, nature, and adulterations of the *Oleum Cajeputi**.

" This remedy was not known in Leipzic until about 1719. In a small quantity, cajeput oil has an agreeable odour; but in larger quantities, and brought near the nose, its odour is acidulous and penetrating, like a mixture of camphor, turpentine, and sabina. It has a hot, pungent taste, like cardamoms and rosemary. It is exceedingly volatile; and, when pure, evaporates without leaving any residue; the colour varies from light green to a grass tint, rarely yellowish, but always transparent. The tree, the leaves of which yield this oil, grows in the East Indies, and, according to Linnæus, is the Melaleuca *leucadendron*.

" To convince himself whether oil of cardamoms might not have been substituted for that of cajeput, Mr. Martius subjected two sorts of cardamom to distillation, and actually obtained an oil somewhat similar to that of cajeput in smell and taste; but he doubts whether the former will be substituted instead of the latter, on account of its high price. He could not discover any other authentic proofs of the goodness and purity of the cajeput oil, but the smell and taste. The green colour is not essential to it, as it is lost in repeated distillation. He also contradicts the opinion that this green colour is the consequence of the copper cannisters in which it is transported; knowing from good authority, that glass bottles are employed for that purpose; but he thinks it probable, that the alloy of copper is owing to the copper utensils used in the process of distillation; and he notices the circumstance of Dr. Gærtner having found that Boras Potassæ is the best reagent for discovering a trifling alloy of copper in cajeput oil. When dropped into the oil which is adulterated with copper, it excites a brownish turbidness. Gærtner also recommended the method of treating the suspected oil with diluted nitric acid, into which a polished iron rod is introduced, on which the copper, if present, precipitates in its metallic form.

" He thinks that oil which is imported by the English and Dutch East-India Companies, in flasks provided with their stamps, is generally pure."

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* *Schweigger's Journal.*

III.—M. Laubert, Member of the Council of Health of Paris, has published the following experiments upon the Cinchona *Condaminea*, (Humb. and Bonpl.) the Cascarilla de Loxa of the Spaniards[*].

"The action of sulphuric ether upon cinchona being as yet undetermined, I made some experiments to ascertain its effects. With this intention I macerated three ounces of the cinchona de loxa, for a fortnight, in one pound of good ether, at 60°. At the end of this time I found that the fluid had assumed a yellowish-green tint, similar to that of olive oil when it is called green. This tincture being evaporated to dryness at the temperature of the atmosphere, left a residue, which, when examined with a magnifying glass, appeared formed of two substances; the one green, and the other yellow in the parts where the layer of its particles was thickest, and of a whitish-green where it was thinner. These two substances, although obtained from the same evaporation, were very distinct from each other. The green was in larger pieces, and had a fatty appearance; the other appeared formed of round particles, in the white part, altogether resembling the pellicle left by an alcoholic solution of a resinous substance, when evaporated upon glass.

"In order to ascertain whether the two substances were really different from each other, or if the differences in their appearance and colour were only accidental, I evaporated, in a small vessel, a part of the etherial tincture, at the ordinary atmospherical temperature, and subjected the residue to the action of alcohol at 38°, which assumed a yellow colour, with a shade of green. In order to facilitate the solution, I had stirred it with a glass rod, which was surrounded with a green substance when taken out of the solution. I evaporated the alcoholic tincture in a pneumatic machine, assisting the action of the latter with some well-dried muriate of lime, to complete the absorption of any remaining portion of moisture. There remained upon the evaporating dish a rose-coloured substance, of an agreeable smell, somewhat resembling that of benzoin. The colour was not uniform throughout; being much paler towards the centre, and deeper towards the edges.

"Another portion of the etherial tincture was filtered through bibulous paper, in order to separate a slight precipitate which had formed in it. I immediately perceived a green substance ascending towards the edges of the paper, while the lower part was coloured with a pale red. The green substance not only gave its colour to the paper, but also rendered it semi-transparent; and its stain very much resembled that of a volatile oil. I, finally, evaporated a portion of the etherial tincture in a pneumatic machine, and dissolved the residue in alcohol, which I afterwards evaporated in a vacuum. The product was a greenish matter in the centre of the vessel, surrounded by a greyish substance, which in its turn was surrounded by a fawn-coloured transparent ring (aureole), more than a line in thickness. This fawn-coloured substance, being separated with the point of a knife, had an agreeable smell, took fire when placed in contact with a lighted body, and produced smoke, which M. Vauquelin thought very much resembled that of frankincense. It follows from these experiments, that the etherial tincture of the *Cinchona de Loxa* appears to hold in solution two substances; the one green, the other whitish, more or less deeply shaded with red by a third substance, which seemed to partake of the nature of the volatile oils. We offer this proposition merely as a conjecture deserving the attention of chemists. This result was confirmed by the following experiments.

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[*] *Journal de Pharmacie,* No. vii. Juillet, 1816. p. 289.

"I poured a little of the etherial tincture into some alcohol slightly warmed in the water bath. The mixture thickened; and as the ether evaporated, a precipitate formed, which appeared brown in the liquor, but when separated had a greenish colour, and was very easily dissolved in ether. The alcohol was yellowish and very bitter. The product of its evaporation shall be afterwards examined. I then poured a little of the etherial tincture into a small quantity of water at 30°, in the water bath: the ether quickly evaporated, and a substance of a greenish-yellow colour adhered to the vessel at the edges of the surface of the water, which had acquired a slight bitterness. This water, evaporated to dryness at a low temperature, left a substance in grains, slightly yellowish, and intermingled with a transparent crystalline substance in very small quantity.

"I deferred the examination of these substances further at this time, and will give the result of my researches when I publish my work upon the Cinchona, in the *Journal de Medecine, de Chirurgie, et de Pharmacie Militaire;* and at present confine myself to the detailing some of their most important characters. The green substance has a disagreeable smell, resembling that of henbane, especially when fresh and separated from all foreign matters; and if chewed for some time in the mouth, it impresses a slight degree of bitterness. If we squeeze it between the fingers, it glues them together; and when we part them, a very considerable number of filaments may be perceived, which become thinner the more the fingers are drawn asunder; and which, after contracting and extending the fingers several times, turn greyish, and are finally reduced to an impalpable powder. Exposed to the air, even in the smallest masses, it preserves its glutinous property; but, in the end, its surface whitens, and the external coat becomes friable. When it is well purified, it is rather insoluble in cold alcohol, and more soluble in hot. Ether dissolves it very quickly, becoming greenish: but in this etherial solution a greyish precipitate is, after some time, formed, which is probably owing to extraneous matter. These characters mark its resemblance to bird-lime (la glu).

"From the cinchona, known in commerce under the name of *Huanuco*, a yellowish warty bark, which appears to me to belong to the C. *purpurea* of the Peruvian Flora, I obtained an oily fluid substance, of a fine emerald green colour, and like almost all the essential oils of exotic plants, heavier than alcohol, in which it preserves its liquid form. I obtained only a very small quantity of this oil, which I had the honour of presenting, along with some other things, to the Society of Pharmacy, and to M. Vauquelin. I collected a quantity of the red substance, which precipitates when either the aqueous or alcoholic tincture of cinchona is evaporated; and treated it with ether: it did not appear to be the same in both cases, at least with regard to the proportion of its principles. The red alcoholic subtance produced with ether a greenish tincture, from which I obtained a considerable quantity of green matter, entirely soluble in a small quantity of ether, leaving only, after some time, a small greyish precipitate. The red aqueous substance imparted an orange colour to ether. I have not yet examined this etherial tincture, but I am inclined to think it holds in solution a little gum, united to the other principles; because, wishing to purify the gum of cinchona with ether, I perceived that it grew soft, and at last became liquid; while this same gum hardens considerably in alcohol, and becomes very viscous. The rose-coloured substance, procured by the ether, quickly dissolved in cold alcohol. When these alcoholic solutions were evaporated at a very low temperature, numerous small globules of oil were seen towards the end of the process, at the bottom and on the surface of the liquid, which afterwards confounded themselves with the extract; and when separated as much as possible, with a pipe terminating in a capillary tube, seemed to be converted into a rose-coloured powder. Having evaporated some of this alcoholic solution in a pneumatic machine, the residue upon the edges of the vessel was transparent, and of a fawn-colour, and contained, towards the middle, a substance united into small particles of a golden yellow, and some parts whitish and crystalline. I did not succeed in obtaining, by successive solution and evaporation in alcohol, any colourless substance. I made some experiments upon the small masses; and at the end of the second solution, my residue was very reduced. A very agreeable odour rose from these evaporations, which is not the same in the different species of cinchona. It has sometimes the smell of benzoin, especially in the cinchona of *loxa* and in the grey bark of *lima*, which I am of opinion belongs to the CINCHONA *nitida* of *M. Ruiz*. Sometimes it smells like orange blossoms, or bitter almonds, and often like canella.

" If the rose-coloured matter be dissolved in the smallest possible quantity of alcohol, and precipitated with distilled water, the liquor becomes milky; and a flaky pearly precipitate is formed, which remains suspended. I have observed, that this precipitate is sometimes slow in forming; but when the rose-coloured substance has been previously subjected to one or two alcoholic evaporations, the precipitate forms very quickly, and is of a whiter colour. The alcoholized water retains a large portion of the colouring matter, and a small quantity of the white substance, whilst the reverse is the case in the precipitate. By this method, with a larger quantity of the rose-coloured matter, I obtained very white and transparent crystals, and an irregular transparent crystalline substance. It is then the colouring matter, which is probably oily, and has a very great affinity with the white crystalline substance, that causes the difficulties encountered in endeavouring to isolate this latter. I had attempted in Spain to isolate the bitter principle by metallic oxides, and ascertained that lime precipitates the colouring matter; but the difficulty of completely separating the latter from it, and the affinity of alumina for the colouring matter, made me prefer it for discolouring the rose-coloured substance. I procured the alumina from the sulphate of that base, and washed it several times with distilled water.

" With alumina, we may completely deprive this substance of its rose-colour, the solution remaining perfectly white and limpid; and by slow evaporation, we may obtain a saline substance beautifully transparent, in oblong crystals and round particles. The alumina takes up and retains with considerable force the colouring matter, and I have not succeeded in restoring it to its natural white, except by employing a very strong heat.

" Potass, barytes, soda, strontian, and magnesia, also discoloured the rose-coloured substance, and offered the same results as the alumina. Besides these substances, I tried the oxides of lead; but I prefer the alumina, because it is insoluble. *M. Vauquelin* lately shewed me a memoir of Dr. Gomez of Lisbon, in which this learned chemist gives an account of the experiments he made to isolate the *cinchonin*, or peculiar principle of the cinchona, following the experiments of Dr. Maton and Dr. Duncan, jun. The method of Dr. Gomez consists in repeatedly washing with distilled water the alcoholic extract of cinchona, and by this means separating the red insoluble substance, which he considers the *extractive principle*. He then mixes together and evaporates to dryness the aqueoüs solutions, and washes this second extract with water saturated with potass; which, according to him, takes up the remainder of the extract, and leaves the cinchonin upon the filter. He purifies the cinchonin, by dissolving it in alcohol, and precipitating it from its solution with distilled water, when it unites in small crystals, and is perfectly pure. I was agreeably surprized in reading the Memoir of Dr. Gomez, because I found that the crystalline matter had been also discovered by this chemist; which confirmed my experiments, encouraged me to regard these crystals as a peculiar substance, and determined me to make some new inquiries as to the green matter, and the oil met with on evaporating the alcoholic tinctures of the rose-coloured substance."

PART V.

MEDICAL AND PHYSICAL INTELLIGENCE.

I.—SOCIETIES.

Royal Society.—On Thursday, June 27, a paper by Sir Everard Home was read, giving a further account of the mechanism by means of which insects can walk up perpendicular walls, or along the roofs of rooms. It turns out different from what he formerly described. In the common bottle-fly, every toe is supplied with two suckers, put in action by the voluntary muscles of the insect, very similar in appearance to the pieces of wet leather and string with which boys lift up stones. In the house-fly each toe is supplied with three suckers. These may be seen by means of a glass when a common fly is walking along the inside of a tumbler. The author concluded his paper with the description of certain cushions upon the feet of some insects to take off the effect of a sudden change from a state of rapid motion to a state of rest.—At the same Meeting, part of a paper by Dr. B. A. Gomez, on the Mode of Fumigating Infected Letters, was read. It became a question in Portugal whether vinegar was sufficient for this purpose. Government gave orders to substitute Morveau's mode by fumigating with chlorine; but Dr. Gomez was doubtful how far it would be effectual, unless the letters were opened. He found that sealed letters or paper parcels exposed to the fumes of chlorine, are penetrated by it, and retain the smell for several days. In tow, cotton, silk, wool, and fur, impregnated with the vapour of putrid meat, inclosed in a letter, and exposed to the fume of chlorine for half an hour, the putrid odour was destroyed in the tow and cotton; the silk retained a little of it, and the wool and fur smelled still very strongly of putrefaction. He made comparative experiments on the powers of vinegar, chlorine, and the fumes of sulphur, in destroying putrid smells. With vinegar it was necessary to dip the letters in the liquid, and then dry them slowly by heat. It was necessary to continue the fumes of chlorine till the writing on the back of the letter was somewhat injured. But the fumes of burning sulphur mixed with nitre destroyed the smell completely, without in the least injuring the writing, and more promptly than the other two methods. For disinfecting letters, therefore, they should be exposed to the fumes of burning sulphur mixed with saltpetre.

II.—MEDICAL.

Apparatus for Inducing Perspiration.—Dr. Gower has lately introduced into the Middlesex Hospital a very simple apparatus, the invention of a foreigner, for inducing perspiration by the application of heated air to the surface of the body. It consists of a wicker frame the length of the body, which supports the bed clothes over the patient, and a wooden board at the foot through which one extremity of a funnel-like tube is introduced. This tube is curved like the proboscis of an elephant, only having the lower end wider in the opening than the upper; so that a spirit lamp may be placed within it. Holes in the side of the tube near the lower end serve to feed the combustion of the lamp, and supply the air, which is thus heated, and ascends into the frame. In a few minutes the temperature is raised to 105°, which does not increase if the perspiration flow freely; but the increase is indefinite if it be not induced. It has been employed with success in chronic rheumatic pains, when fever is not present: but it does not appear to succeed when there is fever and a hot dry skin. We propose to give a drawing of the apparatus in our next Number, with some hints for improving it.

III.—MATERIA MEDICA.

Opium.—We some time ago noticed that Mr. Battley, of Whitecross-street, had decomposed opium. He has since laid its component parts before the College of Physicians: and one of these in solution, under the name of Liquor Opii Sedativus, he has brought before the profession. He asserts, that it is a powerful sedative medicine: and as we conceive this to be an object of great moment, we solicit from our Correspondents any observations they may have made on this preparation.

Ether.—*M. Gay Lussac* has ascertained, that when sulphuric ether is kept for a considerable length of time without being disturbed, acetic acid, perhaps some alcohol, and an oil, are formed in it.

IV.—NOTICES OF LECTURES.

ROYAL INSTITUTION.—An Extended and Practical Course of Lectures and Demonstrations on Chemistry will commence in the Laboratory of the Royal Institution, by Professor BRANDE, on Tuesday the first of October, at nine in the morning, and will be continued every Tuesday, Thursday, and Saturday.—Two Courses are given during the season, which begin in October and terminate in May.—Particulars may be obtained by applying to Mr. Brande, or to Mr. Fincher, at the Royal Institution, 21, Albemarle-Street.

MEDICAL SCHOOL, *St. Thomas's and Guy's Hospitals.*—The Winter Course of Lectures at these adjoining Hospitals will commence as usual the first of October; viz.—*At St. Thomas's,* Anatomy and the Operations of Surgery, by Mr. ASTLEY COOPER, and Mr. HENRY CLINE.—Principles and Practice of Surgery, by Mr. ASTLEY COOPER.—*At Guy's,* Practice of Medicine, by Dr. BABINGTON and Dr. CURRY.—Chemistry, by Dr. MARCET and Mr. ALLEN.—Experimental Philosophy, by Mr. ALLEN.—Theory of Medicine, and Materia Medica, by Dr. CURRY and Dr. CHOLMELEY.—Midwifery, and Diseases of Women and Children, by Dr. HAIGHTON.—Physiology, or Laws of the Animal Œconomy, by Dr. HAIGHTON.—N.B. These several Lectures are so arranged, as not to interfere with each other, or with the Practice of the Hospitals.

Dr. G. G. CURRY, Physisian to St. Thomas's Hospital, will commence in the first week in October, a Course of Lectures on the Practice and Theory of Medicine, and Materia Medica. Particulars at the Hospital.

MEDICAL THEATRE, *St. Bartholomew's Hospital.*—The following Courses ot Lectures will be delivered during the ensuing winter:—On the Theory and Practice of Medicine, by Dr. HUE.—On Anatomy and Physiology: and the Theory and Practice of Surgery, by Mr. ABERNETHY.—On Chemistry and Materia Medica, by Dr. HUE.—On Midwifery, by Dr. GOOCH.—The Demonstrations of Anatomy, by Mr. STANLEY. To commence on Tuesday, October 1, at 2 o'clock.

ST. GEORGE'S MEDICAL, CHEMICAL, AND CHIRURGICAL SCHOOL.—The Courses of Lectures will commence the first week in October.—1. On the Laws of Animal Œconomy and the Practice of Physic, by GEORGE PEARSON, M.D.—2. On Therapeutics, with Materia Medica and Medical Jurisprudence, by GEORGE PEARSON, and W. T. BRANDE, F.R.S.—3. On Chemistry, by W. T. BRANDE.—4. On the Theory and Practice of Surgery, by B. C. BRODIE, F.R.S. Assistant Surgeon to St. George's Hospital.

THEATRE OF ANATOMY, *Blenheim Street.*—Mr. BROOKES and Dr. AGER will commence their Autumnal Course of Lectures on Thursday, October 1, at two o'clock.

THEATRE, *Great Windmill Street.*—Mr. WILSON and Mr. BELL will commence their Lectures on Anatomy and Surgery, on the first of October at two o'Clock.—Mr. BELL will deliver a separate Course of Lectures on Surgery, in the Evening.—The Anatomical Demonstrations by Mr. SHAW.

Dr. ADAMS will commence his Course of Lectures on the Institutes and Practice of Medicine, in the beginning of October next.

Dr. COLLINGWOOD, Physician to the Universal Medical Institution, will commence his Lectures on the Theory and Practice of Medicine, on Monday the second of September.

Mr. CARPUE will commence his Anatomical Lectures, at No. 50, Dean Street, Soho, on the second of October next.

Mr. CLARK will commence his Winter Courses of Lectures on Midwifery, and the Diseases of Women and Children, on Thursday, October the third, at the Lecture Room, 10, Saville Row.

A METEOROLOGICAL TABLE,

From the 21st of July to the 20th of August, 1816,

KEPT AT RICHMOND, YORKSHIRE.

230 Miles NW from London.

D.	Barometer.				Therm.		Rain Gage.	Winds.	Weather.
	Max.		Min.		Max	Min.			
21	29	14	29	14	78	52	04	SE..	1 Sun.. 3 Sh. 4 Rain.
22	29	32	29	23	67	52	09	SW..	1 Cd.. 2 Sun.. 4 Rain.
23	29	25	29	23	74	50		SE.	1 Sun.. 3 Cloud..
24	29	27	29	25	62	52	60	NNW.	1 Mist... 2 Rain....
25	29	44	29	41	66	49		NW.	1 Sh. 2 Sun. & Sh. 4 St..
26	29	52	29	49	68	50		W..	1 Sun..
27	29	44	29	41	66	47	02	W..	1 Sun. 3 Sh.
28	29	41	29	36	65	44	10	NW.	1 Sh.. and Sun..
29	29	32	29	20	64	40	18	NW.	1 Sun.. & Sh.. 4 Starl..
30	29	14	29	13	66	46		NW.	1 Sun.. 3 Sh. 4 Moon..
31	29	19	29	19	68	48	04	W.	1 Sun.. 3 Sh. 4 Rain.
1	29	32	29	30	68	44		W.WSW..	1 Cloud.. 2 Sun...
2	29	36	29	34	64	48		WSW...	1 Sun...
3	29	47	29	45	66	44		SW..	1 Sun.... 2 Sun..
4	29	49	29	49	65	47		SW..	1 Sun... 2 Cloud..
5	29	49	29	49	66	40		WSW.	1 Sun. 2Cd..3 R. 4 Mn..
6	29	55	29	41	70	54	01	SW.SE.	1 Sun....2Sun.3R. 4Cd..
7	29	42	29	35	68	50		SE.SSW...	1 3 Sun.. 2 Sh. 4 Mn..
8	29	35	29	29	73	52		SW..	1 Sun...
9	29	50	29	43	66	44	02	sw..w...wbn..	1 Sun.. & Sh.
10	29	55	29	48	68	52	04	SW..	1 Sun.. 3 Sh.
11	29	55	29	52	69	52	02	sw..sw....sw..	1 Rain. 2 Sun...
12	29	63	29	60	66	52		sw..sw...w..	1 Sun..
13	29	60	29	57	69	42		W..	1 S. 3 Sun...
14	29	32	29	17	64	48	30	SE.	1 Cloud... 3 Rain...
15	29	24	29	16	70	49	20	SE.	1 Cloud.. 2 Sun... 4 R
16	29	35	29	34	64	51		N.	1 Cloud..
17	29	59	29	55	62	48		NNW..	1 Sun. & Sh
18	29	74	29	74	66	50	19	NW.	1 Sun. 2 Rain..
19	29	77	29	77	69	50	02	W.	1 Sun.. 3 Rain.
20	29	84	29	82	66	38		SE.	1 Sun..

THE quantity of rain during the month of July was 3 inches 90-100ths.

Observations on Diseases at Richmond.

Notwithstanding the unfavourable state of the weather during this period, there has been much less sickness than might have been expected. Cases of Asthma, Febris simplex, Cholera, Dyspepsia, Obstipatio, Paraysis, and Phthisis pulmonalis, have been under treatment.

METEOROLOGICAL TABLE FOR LONDON,

From the 19*th of JULY, to the* 19*th of AUGUST,* 1816,

By Messrs. HARRIS & Co.

Mathematical Instrument Makers, 50, *High Holborn.*

M.	D.	Therm.			Barom.		Rain Guage	De Luc's Hygrom. *Dry.*	De Luc's Hygrom. *Damp.*		Winds.		Atmo. Variation		
	20	66	76	57	29^6	29^5			8	10	SW	SE	Fine	—	—
◐	21	60	75	60	29^4	29^6			9	5	S	SSE	Rain	Fine	—
	22	65	69	55	29^7	29^6	13		4	10	S	SSE	Fine	—	Rain
	23	60	65	53	29^5	29^5	20		9	10	SSE	S	Rain	Fine	Clo.
	24	59	64	52	29^5	29^5	24		9	8	SSW	S	Fine	—	—
	25	62	66	55	29^6	29^7			6	5	WSW	W	Clo.	Rain	Clo.
	26	59	68	53	29^8	29^9	13		5	4	W	W	Fine	—	—
	27	62	68	55	29^9	29^8			5	4	SW	WSW	Clo.	Fine	Clo.
	28	60	63	49	29^7	29^7			2	2	W	NE	Fine	—	—
○	29	55	59	48	29^6	29^5			2	3	NE	NE	Clo.	Rain	Clo.
	30	50	57	49	29^5	29^5	15		2	3	SW	SW	Clo.	Rain	Clo.
	31	53	63	53	29^4	29^4	11		3	2	SE	N	Fine	—	—
	1	59	64	54	29^6	29^7			2	2	WSW	S	Clo.	Rain	Clo.
	2	59	62	51	29^7	29^7	25		3	3	SW	SSW	Clo.	Rain	Clo.
	3	58	62	50	29^8	29^8	27		3	2	SW	WSW	Fine	—	—
	4	60	66	51	29^8	29^8		0	0	1	SSW	WSW	Fine	—	—
	5	56	62	51	29^8	29^8			1	2	N	SE	Clo.	Fine	—
◑	6	55	62	56	29^8	29^9			4	4	S	SSE	Fine	Rain	Clo.
	7	60	63	57	29^9	29^8	18		8	5	S	SE	Clo.	Fine	—
	8	62	67	56	29^8	29^7			6	4	S	S	Fine	—	—
	9	60	65	55	29^7	29^7			2	2	W	SE	Fine	Clo.	—
	10	61	63	55	29^8	29^8			2	1	SW	S	Fine	—	—
	11	60	62	56	29^9	30			2	5	SWva	Sva	Fine	—	—
	12	57	61	55	30	30			8	5	WNW	SW	Rain	Fine	Clo.
	13	61	63	53	30	29^9	03		7	3	SW	SW	Fine	—	—
	14	60	63	56	29^7	29^6			2	5	ESE	SSE	Fine	Clo.	—
●	15	58	64	55	29^5	29^4			6	5	SEva	SSE	Fine	Clo.	Rain
	16	60	65	53	29^5	29^7	11		5	3	WSW	WSW	Rain	Clo.	—
	17	58	62	51	29^7	29^8	09		3	5	WNW	WNW	Clo.	Rain	Clo.
	18	57	60	53	29^9	30	07		4	3	WNW	WNW	Fine	—	—
	19	58	63	51	30^1	30^1			2	2	WNW	WNW	Fine	—	Rain

The quantity of Rain during the month of July, is 3 inches 55-100ths.

BILL OF MORTALITY *from July* 16 *to August* 20, 1816.

		July 23.	*July* 30.	*Aug.* 6.	*Aug.* 13.	*Aug.* 20.	
CHRISTENED.	Males..................	241	257	218	204	238	
	Females................	225	268	208	197	243	
		466	525	426	401	481	Total, *(five weeks)* 2279.
BURIED............	Males..................	166	172	144	125	134	
	Females................	160	161	145	147	126	
		326	333	289	272	260	Total, *(five weeks)* 1480.
OF WHOM HAVE DIED...	Under 2 Years....	90	95	79	66	58	
	Betw. 2 and 5	29	35	28	19	25	
	5 and 10	16	14	8	13	13	
	10 and 20	13	11	12	7	15	
	20 and 30	31	22	17	24	28	
	30 and 40	31	29	24	30	26	
	40 and 50	36	34	32	34	32	
	50 and 60	27	30	29	31	26	
	60 and 70	26	32	28	21	15	
	70 and 80	17	19	16	17	13	
	80 and 90	18	10	13	8	8	
	90 and 100	2	2	3	2	1	
SMALL POX..........................		10	12	14	11	12	

Total of Small Pox...*(five weeks)*...59

A REGISTER OF DISEASES

Between JULY 20th, and AUGUST 19th, 1816.

DISEASES.	Total.	Fatal.
Abortio	10	
Abscessio	16	1
Acne	1	
Amenorrhœa	16	
Anasarca	25	2
Anorexia	2	
Aphtha *lactentium*	12	
Apoplexia	3	2
Ascites	7	2
Asthenia	28	
Asthma	28	2
Atrophia	4	1
Bronchitis *acuta*	2	
—— *chronica*	5	
Bronchocele	1	
Calculus	1	
Cancer	3	
Carbunculus	3	
Cardialgia	15	
Catarrhus	73	
Cephalalgia	21	
Cephalæa	9	
Chlorosis	6	
Chorea	5	
Cholera	11	
Colica	16	
—— *Pictonum*	15	
Convulsio	9	2
Coryza	1	
Cynanche *Tonsillaris*	30	
—— *maligna*	2	
—— *Trachealis*	2	2
—— *Parotidea*	8	
—— *Pharyngea*	2	
Diabetes.	1	
Diarrhœa	35	
Dysenteria	10	
Dyspepsia	69	
Dyspnœa	9	
Dystocia	1	
Dysuria	3	
Eczema	3	
Eneuris	2	
Enteritis	7	1
Entrodynia	20	
Epilepsia	6	
Epistaxis	5	
Erysipelas	21	
Erythema *nodosum*	3	
Febris *intermittent*	12	
Febris *catarrhalis*	10	
—— *Synocha*	8	
—— *Typhus mitior*	2	
—— *Typhus gravior*	4	2
—— *Synochus*	16	
—— *Puerpera*	2	
—— *remit. Infant*	14	
Fistula	3	
Furunculus	4	
Gastritis	1	
Gastrodynia	30	
Gonorrhœa	10	
Hæmatemesis	3	1
Hæmaturia	1	
Hæmoptöe	12	
Hæmorrhois	27	
Hemiplegia	5	
Hepatalgia	5	
Hepatitis	14	2
Hernia	3	
Herpes *Zoster*	5	
—— *circinatus*	1	
—— *labialis*	1	
Hydrargyria	1	
Hydrocele	5	
Hydrocephalus	6	4
Hydrothorax	1	1
Hypochondriasis	7	
Hysteralgia	5	
Hysteria	22	
Icterus	16	
Impetigo *sparsa*	1	
—— *scabida*	1	
Ischias	1	
Ischuria	6	
Lepra	3	
Leucorrhœa	15	
Lichen *simplex*	1	
Lithiasis	4	
Mania	5	
Melancholia	5	
Menorrhagia	20	
Miliaria	2	
Morbi *Infantiles**	93	3
—— *Biliosi**	71	
Nephralgia	2	
Nephritis	1	
Neuralgia	6	
Obstipatio	24	
Odontalgia	10	

DISEASES.	Total.	Fatal.	DISEASES.	Total.	Fatal.
Ophthalmia	37		Psoriasis *inveterata*	10	
Palpitatio	2		Purpura *simplex*	3	
Paralysis	13		Pyrosis	4	
Paraplegia	2		Rachitis	1	
Paronychia	4		Rheumatismus *acutus*	37	
Peripneumonia	13	1	——— *chronicus*	38	
Peritonitis	2		Roseola	5	
Pernio	1		Rubeola	39	4
Pertussis	22	1	Scabies	52	
Phlegmasia *dolens*	5		Scarlatina *simplex*	14	
Phlogosis	18		——— *anginosa*	1	
Phrenitis	1		——— *maligna*	1	1
Phthisis *Pulmonalis*	33	14	Scrofula	14	
Pityriasis	5		Spasmi	13	
Plethora	2		Strictura	3	
Pleuritis	12	1	Strophulus *intertinctus*	5	
Pleurodyne	7		Sycosis *menti*	3	
Pneumonia	23	4	Syphilis	36	
Podagra	10		Tabes Mesenterica	3	1
Pompholyx *benignus*	1		Tic Doloreux	1	
Porrigo *larvalis*	2		Vaccinia	40	
——— *decalvans*	2		Varicella	8	
——— *scutulata*	2		Variola	26	9
——— *favosa*	3		Vermes	27	
Prolapsus	6		Vertigo	26	
Prurigo *mitis*	2		Urticaria *febrilis*	2	
——— *senilis*	5				
Psoriasis *guttata*	1		Total of Cases	1754	—
——— *gyrata*	1		Total of Deaths		64

* *Morbi Infantiles* is meant to comprise those Disorders principally arising from dentition or indigestion, and which may be too trivial to enter under any distinct heads; *Morbi Biliosi*, such Complaints as are popularly termed *bilious*, but cannot be accurately classed.

Observations on Prevailing Diseases.

WHATEVER may be the effect of the uncommon humidity and coldness of the season upon the vegetable kingdom, it appears to have been decidedly beneficial in counteracting the diseases generally prevailing at this period. The number of cases is fewer than we have before recorded in the monthly Register; while the weekly bills afford evidence that the mortality is proportionably diminished.

All the diseases within the class *Pyrexiæ*, as well as those immediately arising from derangement of the hepatic functions, and which generally form so large a portion of the disorders of this month, are remarkably low in the scale of numbers. But there have been many very severe cases of pneumonic inflammation; and two of *Cynanche trachealis*, which proved fatal.

Rubeola still prevails, and swells the lists of mortality: it has, in some instances, assumed a typhoid character.

Variola appears to have taken a permanent hold of the ignorant and poorer orders of this great metropolis; and its ravages, of course, are uniformly correspondent.

The cases of *Typhus* were all in the North-Western District, among poor people: one case, accompanied by bilious diarrhœa, proved fatal.

There are a very unusual number of cases of *Colica pictonum* reported; but as they are unaccompanied by any observations, we are at a loss to assign a cause. We hope some of our friendly Reporters will deem it worthy of investigation.

A military officer had been troubled with a cutaneous eruption for above eighteen months, which covered almost the whole of his body with large florid patches, so that little of the natural skin could be seen; and the extremities were beginning to be affected. The itching was most tormenting. Under the advice of various medical gentlemen, he had taken several preparations of mercury, sulphur, antimonials, and pitch, and used different lotions; and sea bathing had been resorted to without effect. By advice of the Reporter, he took twenty drops of the oxygenated muriatic acid thrice a day, increasing the dose every third day; and a lotion, with two drachms of the liquor potassæ in half a pint of water, was applied, increasing its strength to three drachms. In about a fortnight, by persevering in these means, not a vestige of the eruption remained.

V.—CHEMICAL INTELLIGENCE.

Crystallization of Lime.—*Gay Lussac* has lately ascertained that pure lime crystallizes in regular six-sided prisms. To effect this, he put a quantity of lime-water into an open glass vessel, which he enclosed, together with another open vessel, containing strong sulphuric acid, in the exhausted receiver of an air-pump. When the sulphuric acid became too weak to act powerfully on the aqueous vapour, it was renewed. By this means the lime-water was made to evaporate pretty rapidly, and fragments of regular six-sided prisms were deposited in abundance.

Test of Arsenious Acid.—Mr. R. Phillips has inserted a notice in the *Annals of Philosophy*, by which it appears, that the hint lately suggested by a Student at Guy's Hospital, regarding the inadequacy of the colour of the arsenite of silver as characteristic of the presence of that substance, is founded on fact. It is impossible to distinguish the arsenite from phosphate of silver by the colour, as they so perfectly resemble each other. Mr. Phillips adds, "consequently it seems to me, that silver can be no longer admitted as a test of the presence of arsenious acid, without the corroboration of additional evidence."

Monthly Prices of Substances *employed in* Pharmacy.

		S.	D.			S.	D.
Acaciæ Gummi elect.	lb.	4	0	Balsamum Peruvianum	lb.	34	0
Acidum Citricum	-	32	0	—— Tolutanum	-	20	0
—— Benzoicum	unc.	6	6	Benzoinum elect.	-	12	0
—— Sulphuricum	P. lb.	0	9	Calamina præparata	-	0	6
—— Muriaticum	-	1	6	Calumbæ Radix	-	3	0
—— Nitricum	-	4	0	Cambogia	-	10	0
—— Aceticum	cong.	4	6	Camphora	-	8	0
Alcohol	M. lb.	5	0	Canellæ Cortex	-	5	0
Æther sulphuricus	-	10	6	Cardamomi Semina opt.	lb.	10	6
—— rectificatus	-	14	0	Cascarillæ Cortex	-	4	0
Ærugo	lb.	7	6	Castoreum	unc.	5	0
Aloes spicatæ extractum	-	7	6	Catechu Extractum	lb.	3	6
— vulgaris extractum	-	5	0	Cetaceum	-	3	3
Althææ Radix	-	1	6	Cera alba	-	3	9
Alumen	-	0	6	—— flava	-	3	6
Ammoniæ Murias	-	2	0	Cinchonæ cordifoliæ Cortex (yellow)		6	0
—— Subcarbonas	-	4	0	—— lancifoliæ Cortex (quilled)		9	0
Amygdalæ dulces	-	4	6	—— oblongifoliæ Cortex (red)		16	0
Ammoniacum (Gutt.)	-	9	0	Cinnamomi Cortex	-	17	0
—— (Lump.)	-	5	0	Coccus (Coccinella)	unc.	3	6
Anthemidis Flores	-	2	0	Colocynthidis Pulpa	lb.	26	0
Antimonii oxydum	-	7	0	Copaiba	-	6	0
—— sulphuretum	-	1	0	Colchici Radix	-	3	6
Antimonium Tartarizatum	-	8	0	Croci stigmata	unc.	6	6
Arsenici Oxydum	-	2	0	Cupri sulphas	lb.	1	2
Assafœtidæ Gummi-resina	lb.	5	6	Cuprum ammoniatum	-	10	6
Aurantii Cortex		3	6	Cuspariæ Cortex	-	4	0
Argenti Nitras	unc.	6	6	Confectio aromatica	-	9	0

		S.	D.
Confectio Aurantiorum		3	6
— Opii		6	6
— Rosæ caninæ		2	0
— Rosæ gallicæ		2	0
— Sennæ		2	0
Emplastrum Lyttæ		7	0
— Hydrargyri		3	0
Extractum Belladonnæ	unc.	2	0
— Cinchonæ		3	0
— Cinchonæ resinosum		5	0
— Colocynthidis		3	6
— Colocynthidis comp.		2	0
— Conii		0	9
— Elaterii		30	0
— Gentianæ		0	6
— Glycyrrhizæ	lb.	5	0
— Hæmatoxyli	unc.	0	9
— Humuli		0	9
— Hyoscami	unc.	1	6
— Jalapæ	2s. 6d. Res.	4	0
— Opii		3	6
— Papaveris		1	7
— Rhei		3	0
— Sarsaparillæ		1	6
— Taraxaci		0	9
Ferri subcarbonas	lb.	5	0
sulphas		2	0
Ferrum ammoniatum		6	0
— tartarizatum		6	0
Galbani Gummi-resina.		10	6
Gentianæ Radix elect		1	6
Guaiaci resina		7	6
Hydrargyrum purificatum		5	6
— præcipitatum album		9	0
— cum creta		6	6
Hydrargyri Oxymurias	unc.	0	9
— Submurias		0	9
— Nitrico-Oxydum		0	9
— Oxydum Cinereum		1	6
— Oxydum rubrum		6	0
— Sulphuretum nigrum		0	4
— — rubrum		0	9
Hellebori nigri Radix	lb.	3	6
Ipecacuanhæ Radix		17	0
— Pulvis		19	0
Jalapæ Radix		5	0
— Pulvis		6	0
Kino		10	6
Liquor Plumbi subacetatis	M. lb.	0	6
Ammoniæ		3	6
Potassæ		1	6
Linimentum Camphoræ comp.		6	0
— saponis comp.		4	6
Lichen	lb.	1	4
Lyttæ		12	0
Magnesia		10	6
Magnesiæ Carbonas		3	6
— Sulphas, opt.		1	0
Manna optima		7	0
— communis		4	6
Moschus pod, (30s.)	in gr. unc.	40	0
Mastiche	lb.	7	0
Myristicæ Nuclei		20	0
Myrrha elect.		7	0
Olibanum		4	6
Opoponacis gummi resina		30	0
Opium (Turkey)		31	0
Opium (East India)			
Oleum Æthereum	oz.	2	6
— Amygdalarum	lb.	4	0
— Anisi	unc.	3	0
— Anthemidis		6	6
— Cassiæ		9	0
— Caryophilli		6	6
— Cajuputi		7	6
— Carui		1	6
— Juniperi Ang.		5	0
— Lavandulæ		4	6
— Lini	cong.	5	0
— Menthæ piperitæ	unc.	4	0
— Menthæ viridis Ang.		4	6

		S.	D.
Oleum Pimentæ	unc.	6	0
— Ricini optim.	(per bottle)	12	0
— Rosmarini	unc.	1	0
— Succini	2s. 6d. —— rect.	5	0
— Sulphuratum	P. lb.	1	6
— Terebinthinæ		1	0
— — rectificatum		2	0
Olivæ Oleum	cong.	18	0
— Oleum secundum		12	0
Papaveris Capsulæ	(per 100)	3	6
Plumbi subcarbonas	lb.	0	8
— Superacetas		2	6
— Oxydum semi-vitreum		0	9
Potassa Fusa	unc.	1	4
— cum Calce		0	6
Potassæ Nitras	lb.	1	0
— Acetas		9	0
— Carbonas		4	6
— Supercarbonas		1	4
— Sulphas		1	4
— Sulphuretum		2	6
— Supersulphas		0	9
— Tartras		3	6
— Supertartras		1	10
Pilulæ Hydrargyri	unc.	0	9
Pulvis Antimonialis		0	9
— Contrayervæ comp.		0	6
— Tragacanthæ comp.		0	6
Resina Flava	lb.	0	5
Rhei Radix (Russia)		33	0
— (East India) opt.		16	0
Rosæ petala		18	0
Sapo (Spanish)		3	0
Sarsaparillæ Radix		8	0
Scammoneæ Gummi-Resina	unc	3	6
Scillæ Radix siccat, opt.	lb.	4	6
Senegæ Radix		4	6
Sennæ Folia		6	6
Serpentariæ Radix		8	6
Simaroubæ Cortex		6	0
Sodæ subboras		5	6
— Sulphas		0	6
— Carbonas		6	6
— Subcarbonas		2	0
— — exsiccata		5	0
Soda tartarizata		2	6
Spongia usta		26	0
Spiritus Ammoniæ	M. lb.	5	0
— — aromaticus		5	6
— — fœtidus		5	0
— — succinatus		5	6
— Cinnamomi		5	0
— Lavendulæ		5	0
— Myristicæ		3	6
— Pimentæ		3	6
— Rosmarini		4	0
— Ætheris Aromaticus		7	6
— — Nitrici		5	0
— — Sulphurici		7	0
— — Compositus		7	6
— Vini rectificatus	cong.	26	0
Syrupus Papaveris	lb.	2	0
Sulphur		0	9
— Sublimatum		1	0
— Lotum		1	2
— Præcipitatum		2	6
Tamarindi Pulpa opt.		2	0
Terebinthina Vulgaris		0	10
— Canadensis		8	6
— Chia		11	0
Tinct. Ferri muriatis		5	6
Tragacantha Gummi, elect.		8	0
Valerianæ Radix		1	8
Veratri Radix		2	6
Unguentum Hydrargyri fortius		5	6
— — Nitratis		2	9
— — Nitrico-oxydi		3	0
Uvæ Ursi Folia		3	6
Zinci Oxydum		7	0
Sulphas purif.		3	0
Zingiberis Radix opt.		3	6

Prices of New Phials per Gross.——8 oz. 70s.—6 oz. 58s.—4 oz. 47s.—3 oz. 43s.—2 oz. and 1½ oz. 36s.—1 oz. 30s.—half oz. 24s.——The Loudon Glassmen allow 10 per Cent, ready money.——The Manufacturers in the Country, where all Phials [illegible] made, allow 2½ discount, at three months credit, (carriage free, to London.

Prices of second-hand Phials cleaned, and sorted.——8 oz. 46s.—6 oz. 44s—4. oz. 33s. 3oz. 30s.—2 oz. and all below this size, 25s.—Three months credit.

LITERARY NOTICES.

Dr. Adams has nearly completed his "Account of Mr. Hunter's Life, Doctrines, and Opinions." The work contains a review of the improvements introduced by his master, with the state of Surgical Pathology at and before his time.

A work intitled "Oracular Communications addressed to Students of the Medical Profession," is in the press.

MONTHLY CATALOGUE OF BOOKS.

A Practical Essay on Chemical Re-Agents or Tests, illustrated by a Series of Chemical Experiments. By Frederick Accum, Operative Chemist, &c.

Practical Illustrations of Typhus and other Febrile Diseases. By J. Armstrong, M.D. 8vo.

Researches on Pulmonary Phthisis, from the French of G. L. Bayle. By William Barrow, M.D. 8vo.

Cursory Remarks on Corpulence, or Obesity. By William Wadd, Surgeon. The Third Edition. 8vo.

A Treatise on Ruptures. By William Lawrence, F.R.S. The Third Edition, revised, corrected, and enlarged. 8vo.

A Practical Account of the Mediterranean Fever. By William Burnett, M.D. The Third Edition, enlarged. 8vo.

NOTICES TO CORRESPONDENTS.

Communications have been received from Medicus; Mr. Newman, Mr. Kerrison, *and many others, which shall have the earliest possible insertion. But several have also come to hand, one of which is signed* Candidus, *that we must decline. The subject which they expatiate upon is highly interesting to us, and to many others; and all that we can communicate, connected with it in the way of intelligence, we shall not fail to notice: but the pages of the* Repository *destined for Original Communications, must be solely directed to practical objects, or discussions elucidating them.*

Machaon's *paper would long since have appeared; but we must repeat our notice, that as it contains much personal allusion, it must be authenticated by the name of the writer, before it can be printed.*

The Botanical Works shall be reviewed in our next Number.

Communications intended for insertion in the subsequent Number should be sent before the 12th of the month; and should be addressed (free of expence) to Mr. Shury, *Printer, 7, Berwick Street, Soho; by whom Books for the Review Department, Articles of Intelligence, &c. &c. will also be received.*

This Publication, by application to the Clerks of the General Post Office, London; or, if previously ordered, of the Post Masters, British or Foreign, will be sent to any of the British Colonies or Foreign Countries, upon the same terms as other Periodical Works.

THE
LONDON MEDICAL
REPOSITORY.

No. 34. OCTOBER 1, 1816. Vol. VI.

PART I.

ORIGINAL COMMUNICATIONS.

I.

A General View of the Diseases usually occurring in Boys during the Period between Infancy and Puberty, deduced from Observation of those in Christ's Hospital. By Henry Field, Member of the Society of Apothecaries, London, and Apothecary to Christ's Hospital.

(*Continued from page* 51.)

TABLE OF DISEASES.	1816. June.	1816. July.	1816. Aug.
1 Cynanche tonsillaris	.. ...	4	1
2 Febris Synochus	3	2	1
3 —— Catarrhalis	......	......	1
4 Pleurodyne	......	1	......
5 Odontalgia Catarrhalis	......	2	1
6 Nausea, Gastrodynia vel Diarrhœa	7	4	5
7 Obstipatio	1	......	......
8 Cephalœa	2	......	......
9 Erithema nodosum	3	2	.. ...
10 Ecchymoma	......	2	......
11 Petechiæ sine Febri	......	1	......
Totals	16	18	9

The memory of man is scarcely able to recollect a more unkindly Summer than the present: with the exception of about ten days in the latter weeks of August, there have hardly been two succeeding fine days in the whole period, the remainder having been generally cold and rainy. Though this weather has been very unfavourable to the fruits of the earth, yet, it has not been so to the human frame, which has been uncommonly healthy. Cholera Morbus, and other diseases connected with the biliary and alvine secretions, have been almost entirely unknown.

These observations, which are applicable to the public at large, are more particularly appropriate to the Boys of this Establishment, who have continued to enjoy an unusual state of good health. The Infirmary has been uncommonly free from cases of general disease, even when due allowance is made for the absence of a great proportion of the boys during the August vacation.

One death has occurred, but not in the Infirmary. The subject of it was N. T. E., aged nearly fifteen. This case was included in the last Quarterly Report, under the head of Febris Catarrhalis. After remaining about three weeks with us, he was permitted to go to his friends at Brighton; where he continued, as we were informed, gradually declining from pulmonary disease, until his death, which took place about five weeks after his arrival there.

The two cases of Ecchymoma were attended with considerable effusion under the skin of the legs, which lasted some weeks. It must be considered as an uncommon disease among boys. One of these patients was the same boy mentioned in the last Report as being afflicted with Epistaxis; at which time he had a similar effusion on the legs, of which this must therefore be esteemed a relapse; but in the present instance there was no hæmorrhagy from the nose. A similar medical treatment was adopted as on the former occasion, and with complete success, as he is now (Sept. 12th) perfectly well.

II.

A Case of Chorea in a Girl nine Years of Age, in which the Extract of Belladonna was given with success. By Robert Masters Kerrison, Member of the Royal College of Surgeons, and of the Society of Apothecaries, in London.

Mary Phillips, nine years of age, of a pale complexion and slender habit, daughter of a laundress, walked from Swallow Street with her mother to my house, on Monday morning, the 20th of May last. She had not the usual command over the muscles of voluntary action; but had twitching of the arms, starting of her body, and a drawing of the left leg after her: in fact, the disease called *chorea* was clearly defined.

Her mother told me, that, about two months before this time, she had observed the child to start in her sleep, and to make strange distortions of her features when awake: the latter was considered to be an idle trick acquired by imitation, and she was often reprimanded.

The child, being of a placid and tractable disposition, endeavoured to remain still, and her mother soon discovered that she could not avoid doing these things. The habit increased to such a degree, as to induce her mother to send for medical assistance.

A practitioner was consulted about a month after the first appearance of these symptoms. It is presumed that he considered the malady to proceed from some irritating cause in the bowels, as he ordered purgative medicines, which operated actively. He afterwards applied a blister between the shoulders, gave some cathartic powders, by which the child's mouth was made sore, and kept the bowels open after the soreness of the mouth came on until it was well; but the original complaint remained unabated. This treatment had terminated five or six days, when the child came to me.

May 20th.—I ordered the diet to consist of bread and milk, light puddings, a little mutton or veal broth, or beef-tea, once a day. Neither animal food in substance, nor fermented liquor, were permitted. The following powders were given without any other medicine:

℞ Hydr. Submuriat. gr. vi.
Pulv. Jalapii,
Sacchar. alb. āā ℈j. Misce, diligenter terendo, et divide in partes quatuor. Sumat unam manèque nocte è pauxillo mellis.

May 22d.—The four powders have been taken, and procured many dark-coloured stools. The child appears to have rather less of involuntary motion. Four of the same powders were prescribed, to be taken as before.

24th.—The powders have operated considerably, with a very slight abatement of symptoms: great attention had been paid to diet. I now gave the following powder and mixture:

℞ Hydr. Submuriat. gr. iv.
Pulv. Gummi Scammon. gr. vj.
Pulv. Rhei, gr. viij.—Misce terendo, ut fiat pulvis, statim è melle sumendus.

℞ Tinct. fœtidæ
Sp. Æth. Compos. āā ʒj.
Syrupi Papav. ʒij.
Aq. Distillatæ ℥iiss.—M. Ft. mistura. Sumantur cochlearia duo ampla, quartis horis, incipiendo post pulveris operationem.

26.—No perceptible change. Another powder and mixture, like the last, were given, to be administered in the same manner.

28.—Not so well as when she came on the 24th and 26th, although the bowels had been freely acted upon, and she had taken the mixture as directed.

30.—No better. She is, now, in the same state as when her mother first brought her to me.

I discontinued the other medicines, and ordered the following mixture, taking particular care to have it prepared with accuracy.

℞ Extracti Belladonnæ*, gr. j.
Syrupi Croci, ʒj.
Aq. Menthæ Virid. ℥iv.—M. ut fiat mistura, intra 24 horas, haustibus partitis, sumenda.

I desired this medicine to be given, one table spoonful at each time, so as to let the whole be consumed within the period mentioned; and not to give more than a table spoonful at once. To continue the same diet, and to bring the child next day.

31.—There is a slight amendment; that is, the child can stand with less involuntary motion of the body and limbs. Continuatur mistura.

June 1.—The child is a degree better to day, and has fewer twitches and starts; but there is yet much difficulty in walking, which is performed with strange writhings of the body and twistings of the head. The left leg is drawn after her.

6th.—The mixture, as prescribed May 30, has been regularly continued until this day without any unpleasant symptom from its use, or apparent effect; except that the child has been getting progressively better. The bowels have been opened once a day. No cathartic has been given since the 28th of May. A powder, as ordered May 24, was directed to be taken directly, and the mixture resumed after the operation of the cathartic. The extract was increased to a grain and a half; the proportions of the syrup et aqua remaining as at first. The whole to be consumed in twenty-four hours in small doses at suitable intervals.

9th.—The last powder has operated freely; but neither worms, nor fæces presenting any unusual appearance, were evacuated. The quantity of extract is now augmented to two grains in the four ounce mixture, and to be taken as before.

12th. The medicine, as last ordered, has been continued daily to this time. There is a visible improvement: the child is able to stand still, to walk in a straight direction, and to pass both hands over her head without convulsive twitches.

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* The extract of Belladomna was procured at Apothecaries' Hall, where that and all other extracts are prepared by a mode of evaporation which preserves the active principles of the exhaling fluids. See a plate at the end of the Number of this Journal for November last.—K.

The same mixture (gr. ij.) to be continued; but to be taken less frequently, so that it may last two days instead of one.

16th.—She is now so well that the Belladonna is discontinued, and the following powder given. One to be taken at night, twice a week The diet to be continued as at first, with a little meat once a day at dinner time.

℞ Hydrarg. Submuriat.
Sacchar. alb. āā gr. x.
Pulv. Jalapii ʒss.
Contere et distribue in partes quatuor.

30th.—The child has not had a return of the symptoms of chorea, and appears to be perfectly well.

OBSERVATIONS.

The morbid irritability of the system, whatever might have been its primary cause, was removed by the sedative power of Belladonna. I do not believe that the disease in this patient would have yielded to cathartics.

The remarks of a very intelligent author, Dr. Hamilton, on the utility of purgative medicines in *chorea* had not escaped my recollection when the subject of this case was brought to me. Many diseases are produced, all are aggravated, by an improper state of food in the intestinal canal; by the quantity or quality of the secretions from such viscera as pour their fluids into that passage: but even this theory has its limitations in the minds of attentive practitioners*.

I considered it requisite to clear the bowels by repeated laxatives, and to take care that no improper stimulus should be given to the system by the future diet. It was my good fortune to be well seconded in these endeavours by the mother of the child, an advantage not always to be obtained in the management of the complaints of persons in the middle and lower ranks of life.

The treatment commenced on the 20th of May; and having administered purgatives for several successive days, a longer persistence in them seemed to be without an useful object.

The fœtid or antispasmodic mixture was begun early on the sixth day, and continued to the ninth, without doing any good. At this time, I judged it proper to abandon that medicine, and to try the effects of a sedative plan alone. For the reasons alleged page 202 in vol. ii. of this Journal, I took up the Belladonna. The syrup and aqua menthæ virid. were merely a vehicle for the extract.

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* An Essay on the different Effects of Various Cathartic Medicines will be found in the second Number of this Journal for February 1814, and continued in succeeding Numbers. It was conceived in the true spirit of philosophical inquiry, executed with ability, and may be regarded as a valuable guide to the use of aperients.—K.

To obtain correct ideas of the power of any medicine, it should be exhibited alone, and its effects noted with minute attention. Knowledge, satisfactory to the practitioner, and most useful to the patient, can be obtained by no other manner of proceeding. In the administration of the vegetable poisons, which are to be regarded as things of useful or of mischievous agency, the importance of this principle cannot be denied.

The extract of Belladonna was preferred to other preparations of the plant, because its strength was likely to be more equal. When the half-grain was added, a solution of three grains was made in *distilled* water; half of which was used for one mixture, and the remainder on the following day.

A single grain was given every twenty-four hours for seven successive days, without any cathartic. The disease was in full activity when I commenced with Belladonna; it had become gradually less violent to the sixth day, and on the eighth was nearly as on the sixth.

Although no positive indication existed for the employment of a cathartic on the eighth day, I wished to remove every thing from the intestinal canal, to obviate the possibility of excitement from its contents, and to obtain the undiminished sedative influence of the remedy, which I intended to augment to a grain and half in twenty-four hours. This quantity was continued for two days.

The extract was then increased to two grains a day, during the three subsequent days. The child had been brought every day, from the time the Belladonna exceeded one grain in the mixture; and it afforded me great pleasure to witness the rapid improvement, without the occurrence of any untoward circumstance.

At this time (thirteen days from the commencement of the Belladonna) the child was so much better—in fact, so well, that I considered it proper to lessen the quantity gradually; which was done, during the next four days, by making the mixture last two days, instead of one, without disadvantage; for the child was perfectly free from every vestige of *chorea*, seventeen days after the commencement of the mixture, in which extract of Belladonna was the only active ingredient.

I am well aware, that general inferences can only be drawn from an aggregate of facts: and the above case is submitted to the consideration of practitioners, to assist their own experience in the use of a powerful medicine, which has not been, hitherto, so extensively employed in England as many others of the same class.

III.

Case of Puerperal Fever occurring the Twenty-seventh Day after Delivery. By Wm. Woodward, Honiton, Devon, Member of the Royal College of Surgeons in London, &c.

On the 2nd of June last, I was requested to visit Ann Harris, a poor woman of this town, then in labour. The case was a foot presentation. The patient was delivered about six hours after my arrival without any unusual circumstance occurring; but the labour had been remarkably severe, attended by excessively hard grinding pains. She was naturally of a weak delicate constitution and a completely ex-sanguineous temperament.

For some days after delivery she had severe pains, which I first considered as after-pains; but as fever attended, I had recourse to purgatives, which soon allayed it, and the pains left her. She now went on well, and had been out of the house perhaps, exposing herself more than was adviseable, when, on June 29th, I was sent for in haste, as she had been attacked at half past ten o'clock that morning with an almost insupportable pain in the lower part of the abdomen, occupying principally the region of the uterus, which was increased to an excessive degree on the least pressure. At eleven A. M., when I saw her, she was vomiting freely, which I promoted by a draught of tepid water; and shortly after she had a shivering fit. The pulse was 108, and weak and oppressed. At twenty minutes past eleven, I abstracted from a large orifice in the arm, sixteen ounces of blood; after which, she became slightly faint, and the pain appeared less; the pulse fell to 88, and was more soft and full. The following powder was prescribed:

℞ Hydrargyri Submuriatis, gr. iij.
Pulv. Jalapii, gr. xv.—M. Pulvis statim sumendus.

The room was ordered to be kept cool.

At three P. M., I found her with an increase of pain, particularly on pressure; the skin was hot, the pulse 116, and very much oppressed. She had vomited since morning. Sixteen ounces more of blood were taken from the same orifice, and the following mixture prescribed:

℞ Potassæ Tartratis,
Mannæ, āā ʒvj.
Infus. Sennæ, f℥iv.—M. Ft. mistura, cujus cap. coch. ij mag. 2nda quaque horâ.

The pain and confusion of the head, of which she had before complained, left her after the second bleeding; and the pulse fell to 108. At half past nine, P. M., I visited her again, and found the skin hot, but moist. She had taken the whole of the mixture, but had had one full evacuation only. The pain of the abdomen now came on at intervals, but was very acute. She complained of pain in the head; the pulse was 120. The first blood drawn had exhibited no signs of either cupping or buff; but the last was highly cupped, and was covered with a thick buff coat. As the pain still continued, and the abdomen become tense, I thought it right to abstract more blood, and therefore opened a vein in the other arm, and took away nine ounces, when deliquium supervened. She shortly afterwards retched, but did not vomit; the pulse fell to 108. I ordered a large blister to be applied to the lower part of the abdomen, and the following draught to be taken immediately:

℞ Tinct. Opii, gutt x.
Tinct. Hyosciami, gutt xv.
Sp. Ætheris Nitrosi, fʒi.
Liq. Ammon. Acet. f℥ss.
Mist. Camph. f℥j.—M. Ft. haust. statim sumendus.

June 30th. At ten this morning I found her complaining of great weakness, but still with considerable tension and pain on pressure over the whole abdomen; the pulse was 112, soft, and regular; the tongue moist; and she had had three full, dark evacuations. The last drawn blood was highly cupped. Mr. Loyd, a respectable practitioner of the town, attended with me this morning, and highly approved of the plan I had pursued.

Under all the circumstances, although the debility and exhaustion were great, yet I considered the evacuant plan the only one which promised any chance of affording relief; and therefore determined on local abstraction of blood, and the continuation of purgatives:

℞ Olei Ricini f℥i. Protinus sumend. in lacte.

At twelve o'clock I found her nearly as before, but with less pain on motion. She had had one evacuation, and the pulse was 120. The milk, which before the disease had been profuse, I ought to remark, had nearly left her, and the breasts were flaccid. I now applied seven leeches to the abdomen; and ordered a common enema to be injected. At half past four P.M. the pulse was soft, and 112. The nurse informed me she had not been able to inject the enema; but the patient had had another evacuation. The leeches had drawn away upwards of eight fluid ounces of blood, with the after-bleeding. I ordered the belly to be fomented with a warm decoction of poppy heads.

At half past nine P. M. the pulse was 108; the pain rather relieved, and she bore pressure much better. She had more stools, and the tension was abating. Some vomiting had occurred since the last report.

℞ Tinct. Opii, ♏ x.
Vini Antim. Tart. ♏ x.
Magnes. Sulphat. ʒi.
Tinct. Jalapii, fʒi.
Liq. Ammon. Acet. fʒij.
Aquæ, f℥ss.—M. Ft. haustus, 3tia quaque hora sumendus.

The pain appeared not unlike the throes of labour, and during its continuance the breathing was affected; both of which Mr. Hey has remarked to be very general in this disease.

July 1st, eight o'clock A. M. She has had some sleep during the night, and is greatly improved. There is no pain but on motion, and she bears pressure on every part except the exact situation of the uterus. The tension of the belly has abated; the pulse is 100, soft and regular; but there is great debility and anxiety depicted in the countenance. She rejected the first draught, but retained the others. She had also vomited this morning. I ordered the nurse to throw up a clyster if possible, and to exhibit the following pills:

℞ Hydrarg. Submuriatis, gr. iv.
Ext. Colocynth. Comp. ʒss.—Ft. Pil. xij. cap. ij, 2nda quaque hora cum coch. mag. misturæ sequentis:

℞ Liq. Ammon. Acet. f℥ij.
Sp. Æther Nit. fʒij.
Tinct. Opii, ♏ xx.
Aq. f℥ij.—M. Ft. mistura.

At half past two P. M., she felt considerably better, and can now for the first time lie on her side without pain. She has had no evacuations; the pulse is 92. The clyster could not be injected. Pergat ut antea.

July 2nd, seven o'clock P. M. Having been called from town, I did not see my patient last evening, but Mr. Loyd had kindly seen her and ordered an anodyne draught with f℥ss. of infusion of senna. She is improved in every respect; the skin is cool, the pulse soft and 88; and she feels some remains only of pain on pressure or on motion. She has had two stools. I ordered her to take one of the calomel and colocynth pills every second hour, with the mixture as yesterday; but at two o'clock P. M. as I found her better, and that she had had only one stool, I ordered

℞ Magnesiæ Sulphatis, ℥ss.
Aquæ, f℥i.—M. statim sum.

At eight o'clock this evening, as she complained of the medicine having griped her, and the pulse was 96, I gave her twenty drops of tincture of opium, and ordered the mixture to be continued without the pills.

July 3rd. The pain or tension has left her, but she complains of great debility and faintness. I ordered a febrifuge mixture with laudanum and

℞ Pulv. Calumbæ, gr. iij.
—— Rhei, gr. vj.—M. Ft. Pulv. bis die sumend.

I was again obliged to leave the town on business for a few days, and requested Mr. Loyd to see her daily; ordering her to take, in case of costiveness, half an ounce of the sulphate of magnesia, with an ounce of infusion of senna. On the 6th in the evening, I returned home and found her convalescent, sitting up out of bed; but no stool had been procured since last I saw her, although she had taken the laxative draught in the morning. I therefore gave her half an ounce of castor oil; and on the 7th found her very much relieved. From this time she gradually recovered her strength, taking a little infusion of cascarilla, and occasionally a laxative; and the pain and tension having left her, her milk returned in quantity.

REMARKS.

This case is somewhat remarkable on account of the lateness of the attack after confinement. It was the first I had occasion to witness *in private practice*, and I think the good effects of the depleting plan are clearly defined. I should in future have no hesitation in using the lancet even more freely; but here, this woman was of so delicate a constitution, that she could not bear such large abstractions of blood as most people can, who are labouring under inflammatory affections. Had not both the lancet and purgatives been freely used, she would have, I think, fallen a victim to the disease. I conceive from the first, there had been a predisposition to disease, but it had been warded off by purgatives till incautious exposure at length brought it on. I may remark, that two other cases have occurred in two neighbouring towns within a short time; in neither case was the lancet used freely, in one case not at all: but the patients recovered; and in another, in which it was employed sparingly, the patient died. The latter case I had an opportunity of seeing only a few hours before death. I take this opportunity of recommending to my *young medical brethren* the careful perusal of Mr. Hey's excellent Treatise on Puerperal Fever, which I found a great and safe guide; for I am confident that no practitioner knows the anxiety attending the result of a case of this kind, before he has seen it in his private practice, particularly when situated like myself in the very outset of life.

IV.

A Case of Apoplexy. By ROBERT KNOX, M.D. Hospital Assistant, Hilsea.

THE following case of disease in the spinal canal has been considered by most of my medical friends as deserving publicity. It occurred to me about sixteen months ago, and has been withheld from a periodical work only with the view of obtaining farther information on the subject. Such an opportunity, however, has not happened.

CASE.

During my attendance as a pupil at St. Bartholomew's Hospital (in February or March 1815), a man was brought into one of the wards from a house of ill-fame in the neighbourhood. He vomited, was insensible, and died almost immediately after being brought into the hospital. The examination of the body took place next day.

1. The external appearance of the body presented little remarkable. The deceased seemed to have been about forty years of age, corpulent and short necked; and said to have enjoyed good health till within a few minutes previous to his being carried to St. Bartholomew's. He was also stated to have been much addicted to drinking. 2. The thoracic viscera were found healthy; the right cavities of the heart full of dark-coloured blood not coagulated. 3. The surface of the liver was rough to the touch, as if granulated; but the other abdominal viscera were sound. 4. The surface of the brain was minutely injected with arterial blood; although the *sinuses* contained little of that fluid, and no blood vessels could be distinguished in the arachnoid membrane. Several ounces of effused coagulated blood lay on the lateral parts of the brain, and a still greater quantity at its base. The *medulla* oblongata, and the origins of all the nerves, were literally embedded in dark coagulated blood. The situation of the effused blood deserves attention. It lay chiefly under the *arachnoid* coat, i. e. between this membrane and the pia mater; but part also between the layers of the *arachnoid*[*]. The *pia mater* seemed every where a membrane entirely composed of distended blood vessels. In the lateral ventricles was found a considerable quantity of serum, as also several large clots of coagulated blood. One of these lay exactly in the point of communication existing betwixt the lateral ventricles, generally denominated *foramen commune anterius*, or *foramen Monroianum*. The

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[*] In the cavity of the arachnoid, to use the language of Bichat.

choroid plexus resembled a piece of flesh which had been macerated for some time. The quantity of blood in the inferior *cornua* of the lateral ventricles was very remarkable. The fourth was full of serosity. 5. On the posterior and inferior surface of the cerebellum, and on the anterior part of the commencement of the spinal marrow, blood was effused in vast abundance. Here the blood (which, to avoid repetition, I may remark, was every where coagulated) lay between the arachnoid membrane and *pia mater*, and part as it were effused into the texture of this latter membrane. The spinal marrow, throughout its whole length, lay embedded in blood, effused partly between the layers of the arachnoid membrane, and partly between this and the pia mater. More of the effused blood lay anteriorly than posteriorly.

On cutting into the substance of the brain, the bloody points were not at all numerous.

OBSERVATIONS.

Such are the brief details of a morbid dissection, which always appeared to me to be interesting; and more particularly at present, when the medical world seems disposed to investigate the functions and diseases of this organ, not by consulting the exhaustless stores of fertile imagination, but, rationally, by experiment and fair deduction. It is undoubtedly true, that experiments and observations made in this country, have tended considerably to render the public sceptical regarding some of the leading physiological conclusions of the celebrated *Le Gallois*; but it is to be hoped and expected, that patient inquiry, divested of all acrimonious disputation, may yet much extend the limits of our knowledge of the physiology and pathology of the spinal marrow.

Considering the attendant difficulty, I trust that the attempt to point out a few of the more remarkable circumstances of this case will not be deemed uninteresting.

1. The great extent of disease; attacking at the same moment all those parts of the nervous system on which human life is known to depend.

2. The rapid cessation of vitality, differing in this respect from other apoplexies*; and the collateral support furnished, in consequence, to the physiological opinions of Le Gallois. Due regard, however, must be had to the circumstance of pressure exercised on the origins of the phrenic nerves, and to the generally fatal nature of effusions of blood happening beneath the *tentorium cerebelli*, compared with those above it.

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* If the phrase be at any time allowable, the case was truly one of "apoplexie foudroyante."

3. The effusion took place from the vessels of the *pia mater*; although it must also be remarked, that effused blood was found in abundance between the layers of the arachnoid. Was this membrane ruptured?

V.

A Case of Pemphigus, or Vesicular Fever. By EDWARD DANIELL, Surgeon-Apothecary, Weldon, Northamptonshire.

ANY intelligence, howsoever trifling, that tends to enlarge the sphere of Medical Science, or to throw a light on obscure or rare diseases, cannot fail to excite attention; and surely no man deserves the regard of his fellow-creatures so much, as he who exercises his talents and researches in exploring the nature of maladies, in ascertaining correctly the peculiar tendency of diseases, and ultimately adopting such remedies as are likely to to give relief, or eradicate disease.

I have been led into these observations by recently witnessing the prevalence of a disease but little known, and on which some doubt has been fixed relative to its infectious nature, —I allude to that of Pemphigus. Dr. Cullen, when speaking of this disease, says, it "is a rare and uncommon disease, and very few instances of it are recorded in the writings of physicians. I have never had occasion to see it, and therefore it would be improper for me to treat of it myself; and I do not choose to repeat after others, while the disease has yet been little observed, and its character does not seem to have been exactly ascertained*."

The purport of this paper is simply to be regarded as plain narrative; and such ideas which I may chance to broach will I trust be excused, if they are considered as vague or inconsistent: all I anticipate is, that it will give some clue to the nature of the disease, and perhaps prove its dependence on specific contagion.

A number of hay-makers, employed in the service of George Finch Hatton, Esq., were all severally attacked with this disease in a more or less degree. Some, indeed, so lightly, as not to require medical attendance; while others were so alarmingly affected as to excite apprehensions.

The symptoms of its commencement were similar to a common attack of fever, attended with burning heat of the skin, which was only relieved by the appearance of vesicles. In the several cases which came under my observation, the blister exhibited a puckered appearance, scarcely any becoming larger than the size of a nut. Their progress to vesication was extremely rapid; and in the course of a few hours a thin excoriating ichor issued from them, exciting great inflammation, swelling, and uneasiness. The general symptoms were violent sickness, pain, or giddiness in the head, prostration of strength, lassitude, and a general anxiety, aching pain in the limbs, and frequent rigors.

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* Vide First Lines, p. 117.

It is remarkable that this disease should make its appearance only in one field, while numbers of others nearly adjacent did not suffer in the least from it. The general opinion which prevailed among the women (for none of the men were at all affected) was, that it arose in consequence of their going to pull up docks, as it made its appearance directly afterwards. I merely mention this circumstance, because I would not neglect the slightest hint, nor are vulgar notions always to be despised.

The plan of treatment which I adopted is common to all practitioners in exanthematous fevers. At the commencement of the disease, I exhibited an emetic, joined with an active aperient, and promoted a determination to the skin by frequent diaphoretics joined to refrigerents. Where the inflammation of skin was extensive, I prescribed the following embrocation:

℞ Aquæ Calcis,
Ol. Amygdalæ āā f℥j.
Aquæ Kali p. gtt. vi. Ft. Embrocatio, ter die utenda.

This obtunded the excoriating property of the discharge, and consequently allayed the painful degree of irritability, and was otherwise productive of the most beneficial effects; as those who have had recourse to it are now rapidly recovering.

It will perhaps be found difficult to determine in what manner this disease is contracted, or how it is contagious. One would suppose, by its being confined to one field of hay-makers, that its dependance was on some specific virus; but the symptoms certainly contradict this supposition. The vesicles never made their appearance until the body had undergone the exacerbations of fever, and the burning heat existed, which was invariably the immediate forerunner of the vesicular eruption. The arms, the legs, and the thighs, were the principle seats of this complaint; and sometimes the body suffered, but nothing when compared to the extremities.

VI.

ESSAY I.—*Some Observations on the Pathology of Insanity.*

By George Man Burrows, M.D. F.L.S. &c., London.

Insanity in every form is a disease the most afflicting in its consequences on social happiness of any to which mankind is subject. To detail what these consequences are, is quite unnecessary:—they are felt by all ranks, and in all civilized countries, and in none more extensively than in this kingdom. This disorder, which at once deprives man of his highest attribute—reason, and degrades him among created beings, may be traced to very remote periods; for we find all its well-known effects interwoven even with the fabulous history of the Heathen Mythology. It is distinctly treated of by the most antient Greek and Roman, as well as Arabian authors, who professedly wrote on medicine, and by many philosophers who have noticed it among other phenomena in man.

The moderns have supposed that they are less happy than the antients in the treatment of this disease. For this retrogression in therapeutics, I know no particular reason assigned; except it be, that the hellebore, the favourite remedy of the antients, now employed, has not the same qualities as that which grew in Anticyra.

As experience evinces that the improvement in the treatment of insanity is not commensurate with that perfection in the therapeutic art of which the moderns boast, it may be useful to investigate the causes of this defect. The limits to which it is requisite to confine myself will not here admit a full discussion of the subject. But there are many facts sufficiently obvious, and well worthy of notice, which may throw light upon it; some of which, with great deference, I submit for consideration.

The fathers of physic had but a very confused knowledge of physiology: hence their pathology of diseases was often erroneous; their practice being of course guided by the opinions on these subjects which then prevailed. Their system of pathology is contradistinguished from others that have since flourished, as—the humoral pathology. According to this, all diseases originated in the condition of the humours of the body: a redundancy of yellow bile was the supposed cause of mania; and black bile, of melancholia. But as all disorders affecting the mental faculties had, in superstitious times, a peculiar degree of interest, we find that researches into their causes were not omitted. Human anatomy was then rare;

and comparative anatomy was resorted to on most occasions of experimental inquiry. Hippocrates says*, he visited Democritus, to judge of his sanity, at the request of the citizens of Abdera, who thought him mad. He found the philosopher dissecting animals, in order that he might examine the liver, and endeavour if, in the nature of the bile, he could discover the cause of insanity.

The labours of the numerous learned and industrious anatomists and physiologists who have flourished within the last century and a half, have greatly extended our knowledge of the animal economy: they have likewise corrected many former errors, and much enlarged the limits of pathology.

The antients had not these advantages; and therefore probably were more exact observers of the diagnostics of diseases, and more strictly attended to those clinical duties which so eminently contribute to form good practical physicians. They had remarked what I believe, if not always, is more frequently true, that in all cases of insanity, the biliary secretions are in fault, and sensibly changed. Hence they considered vitiated bile as the cause of this disease. They were not aware that such changes resulted from a morbid action in the liver—the organ by which it is secreted; and that, if this viscus be restored to its healthy state, the bile would be natural in its appearance, and be regular in its quantity.

Whatever credit may be given to the opinions of the antients relative to the cause of mental derangement, none who read their writings will dispute the accuracy of their description of its symptoms. Hippocrates, Celius Aurelianus, Celsus, and Galen, are very comprehensive; but Aretæus will probably never be surpassed for minuteness and truth of delineation.

For almost eighteen centuries, the theory of this disease, and the practice in the treating of it, remained nearly stationary. Indeed, I do not remark any writer, till within a century, who has advised any thing strikingly novel, or who has suggested any thing more than the antients. Nay, perhaps I may advance another step, and state my suspicion, that the farther we have deviated from the rules of practice they laid down for the treatment of insanity, the more unsuccessful has been the practice, and the fewer the cures that have resulted.

Contemplating the progress of medical knowledge, it does certainly appear not a little singular, that, in a disease involving all the dearest interests of society, so little exertion has been made to elucidate the cause, or improve the medical treatment of it. This is a real reproach on modern medicine.

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* *Epist.* HIPPOCRATES *Damogeto,* sect 8.

Many English writers in particular, exploding the old humoral doctrine of pituita, or yellow or black bile, as exciting causes, have considered insanity as an idiopathic disease of that organ whence is derived sensation and volition: and as the brain is inferred to be the seat of the sensorium, it is consequently the focus and radius of insanity. In support of this hypothesis, many physiological experiments have been instituted, and much ingenious speculation has been hazarded; but, unfortunately, the deductions have been so intertexed with metaphysical dogmas, that ordinary minds, guided by the induction of facts alone, have been embarrassed and bewildered; and have shunned the investigation, and even the treatment of the disease, as involving mysteries they cannot comprehend: while the nosologist, in his fondness for system, has amused himself with fanciful arrangements, assuming that the aberrations of a disordered reason were the real phenomena of specific diseases.

Even inquirers, who wisely sought for the causes of diseases from morbid examinations, have entered upon and conducted their researches with minds fettered by certain pre-conceived and favourite hypotheses; and have confined their examinations to those parts only, where they have *pre-supposed* insanity to have originated.

But why should the physiologist decide that the brain alone is the seat of the sensorium; and that thence sensation and volition is derived; or that it is the seat of the sentient principle, or of our perceptions or ideas; and that its integrity is essential to these operations? Have not morbid examinations disclosed, that all the functions, generally ascribed to the brain, have been actually performed when the texture of the brain appeared to have been almost destroyed?—or where great lesions or derangements of that viscus have been discovered in persons after death, in whom nothing to excite a suspicion of organic disease had been detected while living? And why should the pathologist presume that the derangement of the intellectual powers, or alienation of mind, emanate from certain morbid appearances he observes in the cranium, when similar appearances have been remarked in the crania of persons who died of other and very opposite diseases?—or why should he conclude that insanity is consequent upon lesions or derangments of the contents of the cranium, when in many persons who have died mad, no sort of lesion or derangement, or vice of formation, could be discovered in their skulls? Yet such are facts; and they are too numerous to require citing. If, then, a person can live, possessing and exercising all his faculties, in whose brain a lesion, or a great state of disease be found, it is decisive that a whole and sound brain is not indispensable for regulating all the functions of the animal economy; and that insanity is not an absolute consequence. If one fact only of this kind be but proved, all the fine-spun hypotheses of the metaphysicians vanish; and we must look elsewhere besides the brain for the causes of insanity.

I by no means intend to infer that the seat of insanity is never in the brain. On the contrary, I hold it very possible that such a morbid state of those parts may, exclusively of injuries, be induced by the continuance or succession of morbid actions, as to occasion derangement of the mind. But then this is an effect; while the cause, perhaps, is seated in some diseased and quite distant organ: and this effect may remain when the cause itself has ceased. Recovery from insanity sometimes happens without any medical means being applied. But when a person is insane, the moral, and the dietetic regimen being properly attended to, the primary cause of his insanity, especially if in the chylopoetic viscera, may thereby be removed; and the brain, which has been sympathetically affected, gradually resumes a healthy action. Organs, slightly deranged in their functions by disease, are soon restored to health: but if the attack be often repeated, a morbid action is excited, and goes on; and, at length, in spite of every attention, is often irremediably fixed. Thus it is well known, that in all incipient cases of insanity, the prognosis is favourable, except where it is the consequence of an organic injury; and that it becomes more unfavourable nearly in a ratio with the frequency of the attack.

It is acknowledged that the brain is the origin of the nerves; and the nerves may convey the impulse given them, as the chords of a musical instrument conduct sounds; but this does not imply that sensation is communicated only when it is applied to the origin of the nerves—the brain. Sensation may be communicated to the nerves from their extremities, as well as from their sources; and be directly carried from one part to another by some branch of those plexi of nerves which intersect and connect all points, and produce, by consent, a certain feeling over the whole of the body, or to any particular part of it, which we denominate sympathy. Perhaps we know not how to define sympathy; yet it is by sympathy of parts only that we can account for those anomalous symptoms which occur and perplex in the treatment of diseases.

Many modern writers have most forcibly and judiciously commented upon the connection by sympathy between the brain and the chylopoetic viscera, and have observed that whether the primary disorder be seated in the one or the other, there is a reciprocal sympathetic action; and, that at length the functions of all the consenting parts may become deranged. But although the moderns have more generally insisted on the influence of sympathy, and amplified upon it; yet the antients appear also to have been apprized that much is often to be imputed to this as an occult source of many otherwise inexplicable symptoms*. Hence many useful practical hints have been gathered; but it is to be hoped that the origin and nature of morbid sympathies will, from their great importance, be much more closely investigated.

Considering the morbid appearances which are detailed by British and foreign authors, who have directed their researches with a view to the enlightening of the pathology of insanity, and which must be accepted as proofs, at least, of industry; it is very extraordinary that all should pursue the same course of inquiry, regardless of the inutility, in a practical point of view, of the labours of their predecessors and contemporaries.

One pathologist only shall be quoted, although the remark applies generally, as an instance of how much talent and time may be fruitlessly wasted when the mind enters upon inquiry prejudiced: *John Ernest Greding*, physician to the workhouse at Waldheim in Saxony, dissected the bodies of some hundreds of maniacs: he gives a very accurate account of all the morbid appearances he met with in the cranium, and in the thorax of each body; but he actually neglected the examination of the viscera of the abdomen† ! Here were presented opportunities of acquiring the most satisfactory information, if they have corporal existence, as to the causes of insanity. How much have humanity and science to lament this omission!

I have diligently consulted every accessible authority to supply the defects of Greding. Some detail dissections of maniacs; but the impression that the cause of the disorder is in the brain, has so much pervaded and influenced the examinations, that they have been almost entirely confined to the head and the thorax. This oversight applies equally to Bonetus, Morgagni, &c., as well as to more recent pathologists. May we not, therefore, fairly ask, if the deficiency of our knowledge of the causes of insanity proceed not from too much refinement?—or if physiologists have not been too speculative and metaphysical?—or pathologists too prejudiced?—or nosologists too fanciful?—and if moralists also have not been too hypothetical? If these doubts be affirmatively answered, shall we not have reason to conclude that our success in the treatment of insanity has not equalled that in other diseases, because our inquiries have not been conducted on sound philosophical principles?

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* Nonnullos verò et corripit à nervis procul à capite positis incipiens, quicunque principium *in consensum* affectus inducunt.—Aretæi *de Causis et Signis*, lib. i. cap. 5.

† *Appendix to Dr. Crichton's Inquiry.*

I have recently inspected the bodies of five insane persons: two of them died in a state of mania; one of these died in convulsions; and three were afflicted with melancholia. The head of him who died of convulsions presented every appearance of too great determination of blood; a small portion of which, as well as some water, was effused between the dura and pia mater; there was also a little brownish-coloured water in the ventricles. In the other case of mania, there was no mark of disease, except that the vessels of the dura mater were a little turgid. Both these patients had been at first melancholic. In one of the cases of melancholia, there was no vestige of disease in the head. In the other two, there was water in the lateral ventricles. , In all the five *the liver was diseased;* and mostly on the concave side; but there was only one in whom it was at all enlarged.

But although they who have examined and described the morbid dissections of the insane, have so generally either quite overlooked, or have been entirely silent on the condition of the liver, yet Dr. Cheyne of Dublin, in his admirable Observations on Apoplexy (p. 178), mentions a circumstance that almost tends to establish a constant state of hepatic disease accompanying mental derangement: he says, that Mr. Todd, Surgeon to the House of Industry in Dublin, found the liver more or less diseased in upwards of four hundred maniacs and idiots, whose bodies he had examined! Dr. Cheyne judiciously remarks, that this fact may throw a ray of light on the mystery in which the cause of insanity is involved. With this opinion I cannot but perfectly accord; and conceive it must have the same weight with others as I confess it has had, conjointly with some experience, on my mind. But even this, conclusive as it is, has, I understand, led to no result proportionate to its relativeness and importance.

Many have attributed the causes of insanity to some defect or alteration in the sanguiferous system; but it does not appear that they who support the doctrine, have attained any greater degree of success in the cure of it.

That insanity, therefore, originates more generally in a corporal cause, than is allowed, is, I think, clear.

If the cure be more precarious and rare since the present rationale has been adopted, it is surely imperative to inquire most seriously into the causes of the failure, and to substitute any other that has the guide of reason, and the experience of the past.

Without any predilection for the humoral pathology of the antients, yet, surely it may be admitted, that when they supposed bile either in a redundant or deficient quantity, and atrabilis or bile in a vitiated state, were exciting causes of insanity, they were not so much in error as the moderns might, from their own views, be led to imagine. Consonant with their reasoning, their plan of cure was judicious; and, assuming it as fact that the liver is greatly in fault in the majority of cases of insanity, the system of evacuation, friction, bathing, gestation, occupation, and temperance, duly enforced, was the most likely that could be suggested to obtain a cure. By steadily pursuing this practice, it is not improbable that the antients were really more successful in the treatment of this disease than the moderns.

We daily witness many symptoms that give no indication of their origin; and for which it is with great difficulty, or we cannot at all account; but which are eventually traced to some derangement of the chylopoetic viscera; and most frequently to that of the liver. Dyspeptic symptoms ensue; and if the cause be not detected, or be neglected, it is not uncommon for a train of other symptoms to follow, which form the true hypochondriasis—a disorder which is very properly classed by Sauvages and others, though not by Cullen, among the *vesaniæ.* This, at length, often terminates in decided melancholia: upon which mania, also, frequently supervenes. But the latter often occurs without any precursory symptom of its approach. In the two former diseases, almost always—and, in the latter, generally—the appearance of the fecal evacuations strongly denote the morbid action of the hepatic and alimentary functions.

As soon as the state of the patient will admit, but which cannot be accomplished while very violent, I have accurately examined the epigastric and hypochondriac regions; and I have generally had clear demonstrations, either by the expression of uneasiness on pressure, or from tension and fulness, that the liver was not in a sound state. Pain about the præcordia, commonly, and symptoms of dyspepsia, or of a morbid appetite, have universally preceded the attack. Some have complained of actual pain in the head; others, of a weight; others, of vertigo, or confusion. The tongue, in all the cases both of mania and melancholia, was always foul, and generally coated with a viscid phlegm.

Conformably with my own deductions, my practice in cases of insanity has been regulated; and I will add, that the result has been most satisfactory. But as my present design is rather to point out what I humbly conceive to be the great error in investigating the pathology of insanity, than to discuss either the diagnosis, or the curative means to be employed, I shall only venture to state, generally, that eleven out of sixteen cases of melancholia, since March, have completely recovered: nine of which were disordered for the first time; two had been repeatedly ill. Six of these commenced with mania, but soon sa into a low state. Some cases, which have since occurred, I do not notice, because the time is not sufficient to form any judgment on the event.

The alvine excretions in every case were very different to those of healthy persons. In twelve of them the stools were dark, and exceedingly offensive. In four they were of a clay-colour, indicative of obstruction of the biliary secretion.

In cases of pure mania I have not been so happy; and, although some have recovered, I must candidly confess that I have attributed the fortunate issue more to Nature than to the means I have employed. The diagnostic marks of disease of the abdominal viscera, have not been so prominent in any of the maniacal as in the melancholic patients; although the alvine discharges bore almost always a very morbid appearance, and the peculiar odour.

It has been asserted by many who have had the care of the insane, that they are commonly insensible to temperature; and that the *primæ viæ* are difficult to excite. As a general law, I must contradict this position. Apathy to surrounding objects is frequent: but I have never yet seen an insane person that did not appear in some way or other sensible of great changes of temperature. Constipation is certainly common. But I am confident it would prove highly injurious, if a practitioner were always to prescribe with the impression of torpidity of intestinal action: it is therefore better to act with caution. Still I am of opinion that all medicines in mania may be usually administered in larger doses than in any other disorder; and I am persuaded that the medicaments prescribed more often fail from the smallness of the doses given, than from the paucity or the inefficacy of the pharmaceutical remedies which we possess.

In medicinal remedies we have a great advantage over the antients: the virtues of fox-glove and mercury, and many active chemical preparations were unknown to them; which now justly rank as powerful auxiliaries in the cure of insanity.

That the moral means which the good sense and humanity of the moderns have so happily devised and applied, must be highly useful in many, nay, in most cases, is indisputable; but they ought not to be wholly relied on: they are adjuncts only to the medical means indicated. It is a great fault, and very much to be lamented, that the moral remedies are not of readier access, and rendered applicable to every situation where insane persons are placed.

I am aware that these succinct and cursory observations will little elucidate this intricate subject; but they may be serviceable by attracting greater attention to the pathology of insanity—the only sure guide to a more successful *methodus medendi.* In this sketch, however, I have endeavoured to shew the probability, that insanity often, if not usually, arises from sympathy with parts morbidly excited, and distant from the brain; and that this action is reciprocally exerted; and therefore that the causes of the derangement of the intellectual functions should not be sought for within the cranium only*. Besides, the success attending the treatment of insanity by the antients is a direct illustration of the truth of this theory.

Possibly I may entertain other opinions regarding insanity, which will by many be deemed heterodox and untenable. In all cases of doubt it were better to consult the judgment of others. I shall not, therefore, hesitate submitting mine to the ordeal of the profession: I conceive:

1. That insanity, in which mania, melancholia, hypochondriasis, and all the species and varieties of nosologists are included, is never an idiopathic, but always a symptomatic disease.

2. That the diseased appearances found in the skulls of maniacs is an *effect*, not a *cause*; but that the effect may remain when the cause has ceased.

3. But that morbid alterations of the contents of the cranium do not always take place in maniacs; and when such are visible on dissection, they are the consequences of inflammation, congestion, or injuries from blows and wounds; or from sympathy with some derangement of the thoracic or abdominal viscera.

4. That whether such morbid alterations arise from diseased viscera, inflammation, congestion, compression, or malconformation, or any other exciting cause, synchronous effects may be produced on the sensorium, and consequent derangement of intellect ensue.

5. That incipient insanity will be most readily and more frequently cured, by applying the remedies to restore the healthy functions of the chylopoetic viscera, except there is another distinct and obvious cause: but where there is evident injury, great excitement, or congestion of the brain, applications and remedies, with a view to relieve, and as preliminary or as adjuncts to other means, may be of great use.

6. That a proper application of moral means may be highly conducive, combined with the physical, to the restoration of a sane state of mind.

7. That hereditary insanity, as it is called, is the consequence of some peculiarity of the animal frame, which may be propagated like any other vice of form in man or other animals.

8. That this disposition may remain latent, and never be displayed, provided no direct exciting cause be applied.

9. That this disposition may be modified or extenuated by

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* *Verum præcipua furoris et melancholiæ sedes viscera sunt.*—*Aretæi de Causis et Signis Morb. Diuturn*, lib. 1. cap. vi.

crosses with families, in whom it does not exist; and may lay dormant for several generations; precisely as we see in breeds of domestic animals, which can be traced back, without blemish, for many years; and yet at last an individual shall be produced, having all the marks and characteristics of the cross or of the aboriginal stock.

It is probable the foregoing propositions will provoke discussion: nor shall I shrink from it. The subject of insanity is an open and expansive field; and the tillage is but just commenced: the soil is neglected, not exhausted, and will yield a rich harvest to the cultivators.

Possessing so few of the requisites, I would not presume to attempt any elaborote treatise on so obscure a disease as insanity. Yet I have the vanity—a vanity which I trust will be pardoned, when the importance of the subject is weighed—to imagine that from the gleanings of what has been noticed by others, from what I have personally remarked myself, and from reasoning, some observations may be embodied, which may throw light on this—the most fearful and dreaded of all visitations.

However ardent the inclination, I am too sensible that there are insuperable obstacles to prosecuting inquiries into the pathology of insanity. To effect this would require to examine the bodies of many who have died insane. But if few opportunities of this nature in private practice occur, they are fully enjoyed by those who are so fortunate as to be attached to public insane establishments: and let us hope they will not be wholly neglected. For myself, I have only to observe, that I shall consider it a great obligation, whenever such an opportunity is afforded me; and through this public channel I earnestly solicit this favour.

For the five dissections I have alluded to, I am indebted to the friendship of different medical practitioners. And I should be wanting, were I to omit this or any other occasion of expressing my gratitude for these, and the many other instances of friendly attention I have received*.

62, Gower Street, Bedford Square.

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* Since this paper was in the press, it has been suggested to me by a most distinguished member of the profession, for whose opinion I entertain the highest respect, that, as I had proposed to occasionally offer some *Observations* on *Insanity*, it would be attended with considerable advantage were they to be published in the REPOSITORY, in a series of *Essays*. This advice I mean to adopt Had it, fortunately, been sooner given, I might have made a different and preferable arrangement. The value and interest of the matter must greatly depend upon the assistance I receive from the profession; and on this source I very fully rely. However, for any defect of mere arrangement in the present instance, I am confident I may claim indulgence.—B.

AUTHENTICATED CASES, OBSERVATIONS, AND DISSECTIONS.

XXXVI.—*A Case of Phlegmasia Dolens.*

On the 16th of April last the Reporter was sent for to draw off the urine of Mrs. G——; and was informed that the operation was recommended to be repeated three times a day. She also stated, that she had been delivered about nine weeks before; after which she did not void her urine until the third day, and then only guttatim; that her labour was quick, and the child very small; that on the eighth day after her labour, she was attacked with pain in her back, groin, and labium pudendi; and on the ninth with a violent pain of the inside of the thigh on the right side, which in the evening of the same day began to swell from the groin down to the ancle, and was before morning twice the size of the other thigh. On the tenth day the foot also began to swell, accompanied with violent pain; and the whole thigh was of a paler colour than usual. She could not move it without occasioning violent pain, and she suffered much from heat and thirst.

The violence of the pain had left her about the twentieth day; since which time she had been getting weaker, and was much troubled with pain in the bladder, as well as a scalding, and difficulty of voiding her urine. Her milk stopped about two weeks ago. Her pulse was quick and small; she complained of thirst, and was very irritable; her bowels were confined, and had been so for a length of time; and her stomach was so weak, that she could not take any thing excepting light gruel. She had been taking saline draughts with opium, and using volatile liniment.

She now came under the care of the Reporter, and eight leeches were ordered to be applied to the pubes; the parts to be fomented until the orifices ceased to bleed; and the following draught to be immediately taken:

℞ Magnesiæ Sulphatis ℥ss.
Infusi Sennæ f℥iss. Fiat haust.

and the following mixture to be taken:

℞ Aquæ Cinnamomi,
Aquæ Puræ āā f℥ijss.
Spiritus Ætheris Nitrici fʒij.
Vini Opii ♏ x. Ft. mist. Capt. Cochl. iij. 4tis horis; incip. horas duas post operat haust. aperientis.

17th. She has voided her urine more freely, and with less pain; has taken some arrow root; has had a tolerable good night. The swelling in the thigh is abated. She was ordered to continue the use of the fomentation, and the mixture with the addition of magnesiæ sulphatis ʒij.

18th.—Mending.

20th.—She complains of difficulty of voiding her urine. The pulse is quick. She is rather costive. The thigh quite well. Let six more leeches be applied on the pubes; and the aperient draught and fomentation, as well as the mixture, be continued.

23d.—She is quite free from pain, and voids her urine in a full stream. She has had good nights; her bowels are open; and the pulse regular, but small. She can take any thing excepting animal food.

25th.—Mending fast; continuatur ut antea.

27th.—She complains of pain in the left thigh, similar to that which she felt when she was first attacked. Let six leeches be applied to the inside of the thigh; a blister to be applied on the upper part of the limb; and the draught and mixture to be continued.

28th.—She is free from pain, and complains of weakness only. Continuatur mistura. The diet to be moderate.

May 10th.—She is now convalescent; and is allowed to sit up two hours.

June 1st.—She is quite well, and able to walk about. Her menses returned about the 20th of May; after which she appeared to mend faster than before that event.—B.

PART II.

ANALYTICAL REVIEW.

I.

A Treatise on the Nature and Cure of Gout, comprehending a General View of a Morbid State of the Digestive Organs; and of Regimen; with some Observations on Rheumatism. By Charles Scudamore, M.D. &c. 8vo. pp. 402. Lond. 1816. Longman and Co.

The epithet *Opprobrium Medecinæ*, which has been applied to a few of the long list of evils over which the healing art has endeavoured to extend its dominion, has, particularly in the disease which forms the subject of the volume before us, too often damped the ardour of inquiry in those who were the best qualified to investigate its causes, and paralysed the efforts that might have been otherwise successfully exerted in fixing its treatment on sound and rational principles. The young practitioner has hesitated to employ in gout those means by which he knows he can readily controul similar symptoms in other forms of disease, on observing his elder brother in art an idle spectator of its baneful influence; while the patient himself, after finding that regular medicine has aimed at little more than palliating the urgency of his sufferings, has either himself strayed into the path of empiricism, and become his own physician, or has fallen the victim of impudent pretension and unblushing imposture. To attempt, therefore, an inquiry into the nature and cure of gout, upon scientific principles, is a merit of itself, independent of the success that may attend the effort. How far our author has succeeded, we shall endeavour to enable our readers to decide.

In his preface, after a rapid sketch of the causes which have contributed to render the treatment of gout empirical, even under the care of the regular practitioner, Dr. Scudamore points out the following general positions, as the ground-work upon which he has built his reasonings regarding the nature of the disease, and the method of treating it:

> " That the gout is a disease not only injurious to the constitution, but destructive of the organization of the particular textures which it affects; and, by such united influence, tends both to shorten and embitter life:
>
> " That it is as completely within the useful influence of Medicine as any other severe disease:
>
> " That the fit may be immediately relieved in its painful symptoms, and materially shortened in its duration:
>
> " The most of its natural bad consequences may, by timely care, be prevented; and, finally;—
>
> " That all these advantages may be afforded by means, which, in removing the disease, tend at the same time to restore the constitution."—p. xii, xiii.

As to the security from future attack, he justly regards that as being altogether within the patient's own peculiar care, provided the paroxysm and the period of convalescence have been properly managed.

The first section of the treatise is a comment upon the definitions of Cullen, to which Dr. Scudamore offers several objections. In the general definition, he objects to the term *Morbus hæreditarius*, as the disease very frequently occurs where no hereditary reference can be traced; and, also, to the assertion, *oriens sine causa externa evidente*, as the disease may be called into action by " a sprain, contusion, or any kind of local injury," when the predisposition to it exists. With less justice he objects to the term *pyrexia*, and to the implication that the joints of the extremities are the seat of true gout; for although there are certainly cases which may be advanced as objections to both these parts of the definition, yet, as it is impossible that a definition can embrace every anomaly, it should be framed from the symptoms attending the more perfect paroxysms, which are generally the earliest of the disease; and it can scarcely be denied that these are attended with fever, and that the seat of pain is one or other of the joints of the hands or feet. We are indeed more surprized at the last objection, as in a table which we shall afterwards quote, out of seventy-one cases of first attacks, sixty-nine were in the feet and hands. We, however, readily admit, that the appellation, *Arthritis*, is preferable to that of *Podagra*, adopted by Cullen. His remaining remarks on the general definition are still more hypercritical.

With regard to the varieties, our author condemns the terms *regular*, *atonic*, *retrocedent*, and *misplaced*; particularly the three latter, as favouring a carelessness of observation in the practitioner, who, under the term irregular gout, "considers himself as excused from the difficult task of nicer discrimination; and, instead of these, proposes to divide gout into *acute*, *chronic*, and *retrocedent*." He considers Sydenham as the first author, "who wrote with much perspicuity on gout and rheumatism:" but his doctrines were clogged with all the prejudices of the humoral pathology. The following are the definitions offered by Dr. Scudamore:

> "Gout.—A constitutional disease, producing an external local inflammation of a specific kind; the susceptibility to it often depending on hereditary bodily conformation and constitution, but more frequently wholly acquired; not occuring before the age of puberty, seldom under the age of five and twenty; and most frequently between the ages of twenty-five and thirty-five; affecting chiefly the male sex; and particularly persons of capacious chest and plethoric habit; in the first attack invading usually one foot only, and most frequently at the first joint of the great toe; but in its returns affecting both feet, the hands, knees, and elbows, not only in the articular structure, but also in the other textures belonging to the moving powers, different parts being affected together, or in succession; often accompanied with sympathetic inflammatory fever, which is marked by nocturnal exacerbations and morning remissions; much disposed to return at periodical intervals, and often ushered in by premonitory symptoms.
>
> "Acute Gout.—Inflammation and pain of the articular, tendinous, or bursal structure, usually attacking one part only at the same time, but in succession of attack affecting different parts together; with preternatural fulness of the adjacent veins, and in certain situations, with œdematous swelling of the integuments, occurring in twenty-four or forty-eight hours from the invasion of the fit; vivid redness of surface, which is sometimes shining; entire disability of the affected part, with peculiar sensations of burning, throb-

bing, cutting and pricking, and weight; the action readily changing situation spontaneously, or from slight causes; terminating almost invariably without suppuration, and usually with critical indications of the event.

"CHRONIC GOUT.—Inflammation and pain more slight, irregular and wandering, than in the acute; faint redness of surface; much permanent distension of parts, or continued œdema, and impaired moving power; without critical indications of its terminating; associated with a morbid state of the digestive organs, a languid or oppressed circulation, and much nervous irritation in the system.

"RETROCEDENT GOUT.—Metastasis, or transference of the gouty action in the paroxysm, from the external part, to some internal organ."—pp. 15—17.

These definitions are certainly much too long, and embrace too many objects; brevity being the essence of a definition, which should entertain the more prominent characteristics only of the object, or the action described, by which it is distinguished from every other object or action. A definition should also be of such a length only as to allow of its being easily committed to memory.

The history of acute gout is divided by Dr. Scudamore into *premonitory symptoms*, the *paroxysm* comprehending the symptoms of a first fit and those of subsequent attacks, and the *sequelæ*.

The disease is not preceded by premonitory symptoms in every instance; its invasion in the first fit being more commonly immediate, and generally happening in the night: but often symptoms occur for several days, which announce the approach of the disease. These are well and accurately detailed by our author. They are chiefly those of dyspepsia, attended with anomalous pains and feelings of directly opposite natures in different constitutions. We are rather surprized not to find noticed amongst them severe and continued sneezing, a premonitory symptom which we have observed in more than one patient.

The history of the paroxysm, we are told, is drawn up "from the results of our author's own experience and careful observation." The first fit, he informs us, in the majority of cases, "makes its attack between twelve and three in the morning:" and the great toe of one foot only is the part affected; but besides the pain, stiffness, burning, and throbbing in the part, fever and restlessness supervene, and continue for two or three hours, when they yield to gentle perspiration, and some sleep is procured. The degree of pyrexia, however, he regards as altogether sympathetic, and "proportioned to the local inflammation and pain." From seventy-one examples, under his "own observation," he has drawn up the following comparative table "of the parts affected in the first fit."

> "In the great toe of one foot only, forty-nine cases. In the great toe of each foot, four.—In the toe and instep, two.—In the outer side of one foot, two.—In one ankle, two.—In each ankle, one.—In ankle and instep of one foot, one.—In toe, instep, and ankle of one foot, one.—In instep of each foot, one.—In heel of one foot, one.—In each foot and hand, one.—In one toe and thumb, one.—In right knee, one.—In left knee, one.—In one hand at the back, one.—In one wrist, one.—In each hand at the back, one." —p. 24.

The frequency of subsequent attacks depend on "the constitutional tendency to the disease, and the mode of life of the patient. The same foot is generally affected, "but it seldom happens that the other foot escapes."

Under the title of *Aggravated Returns of Gout*, after describing the usual external appearances of the disease, our author hazards the following theoretical opinion:

> "When the cellular parts have been for some time swollen and tense, the blood which has stagnated in the strictured vessels, ceases to give the vivid blush of red, and changes to the different shades of purple."—p. 27.

Now we conceive it to be quite an assumption, that there is stricture of the vessels; and, if there were, it is not very probable that the blood would stagnate in them: but if any stagnation occur, it would more probably be before the strictured parts of the vessels, which would necessarily be dilated beyond their ordinary diameter, by the accumulated blood.

The severity of the pain inflicted by gout is almost proverbial: our author observes, that observation has taught him that it is most urgent when the elbow-joint and the tendons at the wrist are the parts affected. The temperature of the part, as indicated by the thermometer, we are told, is "greatly beyond the natural standard," an expression much stronger than his experiments to be afterwards noticed authorizes. Several cases are quoted, as described by the patients themselves, to exemplify, in a striking and familiar manner, the severity of the local symptoms.

Having detailed the local effects of the disease, Dr. Scudamore proceeds to notice the constitutional symptoms of the paroxysm. These more generally resemble those attendant on an aggravated attack of dyspepsia; the intestinal secretions are foul and offensive; and the urine, which is scanty and of a deeper colour than natural, is much increased in specific gravity; and, on cooling, "deposits a pink or brick-dust sediment, with much mucus." There is some degree of incorrectness in regarding the deposition of the pink sediment as one of the symptoms occurring during the continuance of the paroxysm, as it does not begin to appear until it is fairly over, or the crisis is passed. "The sensibility of the nervous system is highly excited; and a general febrile action accompanies the local inflammation." Acute gout leaves, as sequelæ dyspepsia, a disposition to hypochondriasis and apoplexy; occasionally a diseased condition of liver; and our author has met with chronic splenitis in two very gouty females. Gout has generally been supposed to leave also a disposition to calculous complaints, an opinion which does not accord with the experience of Dr. Scudamore, who observes that, "calculus of the bladder is a very unfrequent complaint amongst gouty persons." The local changes produced by gouty inflammation are well described. The gouty concretions (commonly called *chalk-stones*) occur only in a few individuals of particular gouty idiosyncracy.

> "They result from inspissation of the peculiar morbid secretion which constitutes their composition, and are found in various situations from within the synovial membrane of the joint, even to the layers of the cutis. I have found them in the living subject, filling the bursæ, and condensed to great hardness; in the sheaths of tendons feeling almost stony; in the cellular membrane either in hard or soft lumps; and under the cuticle, pressing for escape."—p. 39, 40.

Dr. Scudamore, like preceding writers, has divided the remote causes of gout into *predisposing* and *exciting*, a division, however, which has occasioned much confusion, scarcely two authors agreeing which are to be regarded as predisposing, and which as exciting causes. Under the predisposing we find *hereditary predisposition* first mentioned; a cause which has been pretty generally regarded as being more evident in gout than in any other disease.' Our author does not deny the hereditary nature of gout; but he maintains that it is more frequently acquired, and satisfactorily supports his opinion by the following comparison:

> "Of 77 patients, the number of those in whom the disease was

Hereditary from the father, was....................	21
———————— mother, ...	5
———————— father and mother,............	3
Of those whose grandfather only had gout,.........	3
————— grandmother only had gout, ...	1
————— aunt only in the family had gout,	1
Not known either on the father's or mother's side,	43

> "From this statement it appears, that the cases of acquired gout, in which no family reference could be traced, were to the rest as 43 to 34; and in the examples contrasted with those immediately hereditary, as 43 to 29."—p. 42.

Although we are willing to admit "the exemption of youth from gout," and its more frequent occurrence at adult age, yet, we cannot conceive how *adult age* can be placed as a predisposing cause of the disease. The fact is, that at this period many other predisposing causes begin to operate; as, for example, habits of indulgence as to food and sexual intercourse. From a tabular view, exhibiting the period of the first attack in sixty-four cases, more than two-thirds appear to have occurred between twenty-five and forty years of age. Another tabular comparison in relation to stature and bulk of 118 cases of the disease, shews that 41 males and 7 females were tall and corpulent, while 6 males and 4 females only were short and slight; hence we allow that our author is authorized in regarding *particular bodily conformation*, as a predisposing cause; and as justly are *constitution and temperament* set down under that head. We would make the same remark, on the ranking *the male sex* as a predisposing cause, as we have just made on adult age; and the author himself supplies us with an argument.

> " The more common occurrence of this disease in men than in women, must without doubt be principally referred to the chief remote cause, excess in living, and especially excess in wine, being applied in a greater degree to the former. But in addition to this circumstance, the superior delicacy of the female structure and habit, puts some restraint on the acquirement of the inflammatory and plethoric state of vessels which appertains to gout. The actions of the uterus are not without effect in counteracting a general redundancy of blood. A gout of imperfect developement, or of a chronic form, is more common in women than in men. It is also seldom acquired in the former, unless with the concurring influence of hereditary predisposition. In the few exceptions which do occur to this general rule, we meet with the circular chest, large full veins, relaxed solids, and tendency to corpulency, which have been already described as prevailing in gouty men."—p. 106, 107.

The other predisposing causes enumerated by Dr. Scudamore, to which we conceive no objection can be made, are *station of life and occupation, state of mind, animal food, indolence, plethora, nimia venus, a morbid state of the digestive organs*, and *variable climate;* each of which are fully aud ably illustrated. The acquired predisposition to the disease, he asserts, depends on unhealthy assimilation, a state of which it is difficult to judge, because it is often conjoined with an active appetite: but, although the powers of the stomach may be apparently sufficient for the digestive function, yet, it is justly remarked, that this organ only begins the process; and a morbid interruption to any part of the train of digestive " functions, may become a predisposing or [an] exciting cause [of] gout." The most remarkable symptom which marks the seat of the dyspeptic symptoms being the intestinal canal, is an increased secretion of mucus, which assumes a gelatin-like appearance, and detached from the fæces when passed. This appearance of the mucus, which is not well described by our author, is often very remarkable.

We have seen it many yards in length, assuming an appearance very similar to that of tape worm.

Severe study and *strong liquors* ought certainly to be considered rather as *exciting* than *predisposing causes*; and in support of this opinion, particularly with regard to severe study, we would advance the observation of Sydenham, quoted by our author, "that his immoderate application to the composition of his treatise, occasioned him the severest fit of the gout which he ever had."

The first of the exciting causes, noticed by our author as such, is *excessive intemperance*, a cause, regarding the operation of which there can be but one opinion: the second is *acidity*, which, when "much accumulated in the primæ viæ,' will sometimes prove alone sufficient to excite a fit, and always powerfully concurs with other causes. The third cause mentioned, *excess of bile*, we think more questionable; and it is not improbable that the jaundiced skin and symptoms of increased hepatic action, said to "occur as the short precursors of a paroxysm," are really sympathetic symptoms of the actual presence of the disease, although the local and more obvious effects be not yet evident. There can be no doubt of the propriety of regarding *cold* as an exciting cause of gout; and the same may be said of *external injuries* and *passions of the mind*, in the strongly predisposed.

Dr. Scudamore next enters upon a more difficult discussion, and one which, to employ his own language, has proved an *ignis fatuus* to medical theorists—*the proximate cause* of gout. In noticing the doctrine of a *morbific matter*, which appears to have taken its rise from the uric concretions, commonly called chalk-stones, that appear on the extremities of some gouty individuals, he enters into an examination of the nature of the pink sediment deposited in the urine on the decline of each paroxysm; and has satisfactorily, in our opinion, proved, that the theory supported by Vogel* and other French chemists, which supposes this to be a distinct acid, the rosacic, is by no means demonstrated: but, on the contrary, that it is simply uric acid modified by some principle, probably animal matter, which is separated from it by the action of other acids; for example, as the sulphuric and sulphureous, in which it is soluble. The presence of this sediment, however, he contends, is "not to be considered as a proof of an excess of uric acid; but rather as a separation of this principle from the urine, and a new combination with some other of its elements." The urine containing it, he ascertained by experiment, is of a high specific gravity; and he found that its appearance and quantity in the urine was always connected with and in proportion to the unhealthy state of the chylopoetic functions, but neither "necessarily nor regularly attendant on a paroxysm of gout."

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* A translation of Vogel's Observations and Experiments upon the Rosacic Acid appeared in the *Repository*, vol. v. p. 481.

Having negatived the suggestion, that the proximate cause of gout is an excess of uric acid, our author next proceeds to examine that theory which attributes it to an *excess of phosphoric acid*. This opinion was suggested by Berthollet, who imagined that his observations led him to conclude, that phosphoric acid is naturally in much smaller quantity in the urine of individuals subject to gout than in healthy persons; "but that at the approach of a paroxysm, and during its continuance, the urine contains as much of phosphoric acid, as that of persons of strong constitution, and much more than belongs to the gouty in their ordinary state." Thirty-seven experiments of Dr. Scudamore, to ascertain the truth of Berthollet's opinion, are perspicuously detailed, and a tabular abstract of the results given; from which it appears, that although there is really an increased proportion of phosphoric acid in the urine of persons labouring under a paroxysm of gout, yet, that the same circumstance occurs in persons suffering under other diseases, as for example, diseased liver and continued fever, who had never had gout. He, therefore, properly concludes, that as "the phenomenon in question cannot be considered as a specific occurrence in gout alone," it cannot be regarded as the proximate cause of that disease.

As we conceive every information connected with the cultivation of animal chemistry cannot be too widely diffused, we extract the method employed to ascertain the quantity of phosphoric acid in the urine examined by Dr. Scudamore.

> "In these experiments, nitrate of lead was the precipitant employed; and the urine was diluted with distilled water. A portion of the urine, first and separately passed in the morning, was, in each case, chosen for examination. The precipitate was carefully dried and scraped from the filter. Of this a certain quantity was boiled in water, that the muriate of lead might be removed; and with it also the uric acid was separated. It was then burnt in a crucible for about half an hour, that the several animal matters should be destroyed as much as possible. It was next boiled in diluted nitric acid; and being allowed to rest, the clear liquor was decanted from the sulphate of lead and some insoluble animal matter. To this ammonia was added in excess; the precipitate was collected on the filter, dried, and weighed. This was the phosphate of lead, from which the relative proportion of phosphoric acid was estimated, by means of Dr. Wollaston's logometric scale."

Our author briefly mentions some incongruous opinions of

Barthez, the most copious of the French writers on the subject of gout; and then notices Dr. Sutton's theory of a morbific secretion in the alimentary canal being the proximate cause of the disease; an opinion which he regards as not only gratuitous, "but much too restricted in its views;" and considers as generally less objectionable Dr. Parry's idea, "that the gout is a disease depending on certain conditions of the circulating system." He very prudently advances no direct theory of his own under the head proximate cause: but in proceeding in the investigation of the ratio symptomatum, he arrives at the following conclusion:

> "That gout is a disease depending on a redundancy of blood with relation to the powers of the circulation, particularly affecting the system of the vena portarum, and the consequent functions of the liver; together with the production of a morbid change in the secreting functions of the alimentary canal in general, and of the kidnies in particular."—p. 123.

The formation of uric concretions, our author conceives, does not necessarily require "an active inflammatory action of vessels," or acute state of gout. He thinks also, that when it does occur, "the capillary vessels of the part affected with gout may act *vicariously*, in a greater or less degree, to the secreting vessels of the kidney." In some instances in which there were concretions both on the hands and feet, uric acid was almost totally absent from the urine. He thinks the circumstance of ligaments, the sheaths of tendons, and aponeuroses, being more frequently the seat of gout, is the reason why the local affection rarely terminates in suppuration. In the only case of gouty abscess which he has seen, "the purulent secretion was formed wholly in the common integuments;" and the result was modified by an attendant secretion of urat of soda. Neither does gouty inflammation produce coagulable lymph, the thickened state of parts being referable to "a change of structure in the ligaments, the bursæ, and the tendinous sheaths; and also from the morbid secretion of the two last textures."

Gouty inflammation, "when attended with severe pain," produces, according to Dr. Scudamore's observations, a much stronger sensation of heat in the affected part, in relation to the real quantity evolved, than is occasioned by rheumatic inflammation: to illustrate which fact some experiments are detailed, from which it appears, that the sensation of heat in gouty inflammation "corresponds rather to the degree of pain which is present, than to the thermometrical temperature of the affected parts."

After pointing out the diagnostic characters by which gout may be discriminated from rheumatism, erysipelas, and phlegmon; and the symptoms on which a prognosis may be formed; our author proceeds to the consideration of the more important part of his subject, the treatment of the disease.

In taking a general view of *the treatment of gout*, Dr. Scudamore with much reason condemns Sydenham's prohibition against any interference in the paroxysm; an opinion which unfortunately too long swayed the practice of his successors.

> "I would assume it therefore," adds he, "as a principle, that we should attempt the prevention of a fit of gout, if warned of its approach, and interrupt its progress when formed, *unless* such a state of the constitution exist, that the gout has taken the place of another more serious disease, or may be expected to prevent one which is threatening, and more to be dreaded than itself."—p. 146.

The detail of the treatment commences with that of the *præmonitory symptoms;* which, if the inflammatory diathesis be present, are to be combated by bleeding; by promoting the hæmorrhoidal discharge, if there be any tendency to it in the constitution; and removing costiveness by active purgatives; in conjunction, if heartburn and other symptoms of dyspepsia exist, with the administration of an ipecacuanha emetic. When the secretions remain in a vitiated state, small unirritating doses of mercury, bitter aperients and alkalies, with careful moderation in diet, horse and foot exercise, country air, and changing all the *lædentia* for the *juvantia*, are the remedial means to be pursued.

Before proceeding to describe *the treatment of the paroxysm*, our author offers the following prefatory admonition:

> "In our choice of remedies for the particular symptoms which appear in every individual case, we should reflect upon the kind and degree of the predisposing and exciting causes, by which the fit has been introduced; and our practice should be relative to such consideration, as well as to the age, constitution, and temperament of the patient."—p. 148, 149.

He then proceeds to detail the treatment under the heads "of the several remedies which" he has "thought most deserving of attention." We propose to follow him through this arrangement.

Bleeding.—With regard to the employment of the lancet in the paroxysm of gout, our author agrees with the opinion of the best practitioners, that although when circumstances, as cold and wet, or excess, have occurred to render the inflammatory diathesis more permanent, bleeding is the proper remedy; yet, it "is not allowable with the same freedom as in the other phlegmasiæ." When it is proper, however, "its early employment is a point of much importance:" but although the degree of the general inflammatory action, and the effect produced, must necessarily regulate the quantity to be abstracted, and the repetition of the venesection, yet, we are told, "it should be in relation to the powers of the individual rather than to his age;" a remark, which we believe is as applicable to every other form of disease as to gout. When there are marks of congestion in the hepatic or cerebral circulation, "ample local cupping is to be preferred to the lancet."

Emetics.—The experience of our author does not induce him to advise their employment, except when the stomach is loaded with acid or other irritating matters; yet, a very striking instance is detailed of the good effects of one which was exhibited in the commencement of the attack.

Cathartics and Diuretics.—"On the choice and free employment of these" we are informed the successful treatment of the paroxysm chiefly depends. This action particularly unloads "the vessels belonging to the system of the vena portarum," and the efforts of Nature to remove redundant matter are assisted, by their stimulating to increased action at the same time the exhaling [excreting] vessels of the alimentary canal, and the secreting functions of the kidnies. Although, under certain limitations, Dr. Scudamore regards elaterium to be a medicine as useful as it is purgative, yet his own experience leads him to prefer calomel joined with antimonial powder, compound extract of colocynth and soap; and where a combined and continued action upon the bowels and kidnies is required, magnesia and sulphate of magnesia, conjoined with acetum colchici. He gives the latter combination at intervals, so as to procure from four to six stools in twenty-four hours, "until the fæces and urine acquire healthy characters; and the tongue becomes clean and moist; and adds,

> "This preparation of colchicum, joined with direct purgatives, has never disappointed me in its effect, either to *assist* the other ingredients in the production of watery evacuations from the bowels, or to increase the discharge of urine abundantly, or both."—p. 156.

Mercurial Preparations.—Mercury, in small doses, combined with antimonials, or in a full dose with purgatives, produce excellent effects; but when exhibited so as to produce mercurial fever, or irritation, it proves extremely injurious. Three cases are noticed illustrative of this fact.

Dr. Scudamore next adverts to a few of those remedies that swell the ample list of *pretended specifics*, which have had the greatest share of popular estimation. The *tincture of Hellebore and Opium* he has seen injurious in several cases; in one even it apparently brought on apoplexy; and he thinks that, in any form of combination, hellebore "should be entirely deprecated as a remedy for gout." From *Gratiola* he has not obtained any satisfactory results, and is rather inclined to think it an inert medicine: and, although he speaks favourably of the *acetum Colchici*; yet, of both the powder and tincture he observes, "from neither have I been able to trace the smallest *specific* operation; on the contrary, the stomach was irritated," and an increased fur of the tongue with thirst induced. Our own experience accords with this observation. Of the *eau medicinale* he speaks more at length. From the result of some experiments on the preparations of Hellebore and laudanum, the tincture of Colchicum, and that of Gratiola, he does not give credit to any of the supposed discoveries of its composition; and his own experience of its effects as a medicine enables him to state, that, although at first "it proves in most instances a powerful palliative or short cure, yet, it ultimately insidiously leads to a train of subsequent evils, an impaired condition of the nervous system, weakened digestion, and indolent bowels," while "the limbs, especially the parts affected in the paroxysm, suffer for many weeks with tremblings, numbness, and coldness, and commonly with tedious œdema." He adds, "it may with truth be stated, that sooner or later, in proportion as it is freely employed, it leads to a broken state of health." We cannot from our own experience speak of this remedy; but, although our author supports his opinion by the high authority of Dr. Gregory, and we are averse from supporting any thing which favours of quackery, yet justice obliges us to state that we know several instances in which it has been productive of the most salutary effects, and where it continues to prove beneficial, notwithstanding the long continued employment of it.

Peruvian Bark.—The favourable testimony of Dr. Tavares and Dr. Small of the effects of bark; and Dr. Helds eulogy—"uno verbo, cortex peruvianus in podagra *divinum est remedium*," have not induced Dr. Scudamore to make trial of this medicine. *Sudorifics*, he thinks, should be given with caution; as the powerful relaxation of the skin increases its susceptibility "to changes of the atmosphere at the period of convalescence, and the consequent danger of relapse."

Narcotics.—Nothing so soon or so effectually relieves the pain of gout as opium; but its beneficial effects are altogether "dependant on the manner of its use, both as to preparation and dose:" and as a general rule, our author observes, "any inflammatory diathesis, and a constipated state of bowels, should be removed previously to its administration." The following is our author's method of employing this remedy:

"The patient, being furnished with twelve pills, each containing one grain of *crude* opium and half a grain of antimonial powder, may be desired to take one, two, or, if pain be very severe, even three, at bed-time, as the first dose, and repeat one every hour or two afterwards, according to the degree of pain; this being the only regulation as to the quantity to be employed, when no contra-indications are present."—pp. 170, 171.

Now we see no objection to this mode of exhibiting the opium; but of what use the antimonial powder can be in half grain doses, we cannot conjecture. When, from peculiar idiosyncracy opium disagrees, Dr. Scudamore recommends the use of henbane; but he justly places little dependance on *humulus lupulus;* indeed the experiments of Dr. Bigsby* are sufficient to raise doubts of the utility of this preparation in any case.

Some excellent rules are laid down for the regulation of *diet* and *bodily exertion*, the latter of which, cautiously employed even in the paroxysm, counteracts in a great degree the consequent stiffness, debility, and lameness.

In detailing the *local treatment* in the *paroxysm*, the same method is adopted as in the history of the constitutional treatment, our author's opinions being separately delivered under the head of each remedy. He does not recommend the employment of *leeches*; and even adds, that their indiscriminate use "in gouty inflammation is by no means innocent;" nor does he appear to think more highly of opening the distended veins near the inflamed part. Of the effects of *vesicatories and irritants* he has had no experience: external *warmth*, he thinks, worse than useless; and prefers sponging with tepid water to *poultices*, as commonly employed, the *pediluvium* or *the muriatic acid bath*, which in one case he found productive of an aggravation of pain and inflammation. He enters fully into a refutation of the practice revived by Dr. Kinglake, on "the narrow principle," as he properly terms it, "of considering the gout as a local disease;" and lays it down as an axiom, that the local treatment, although not to be neglected, yet, is always to be regarded as of secondary importance. Instead of cold water therefore, he recommends the following lotion, which he has employed in forty cases with the best effects; and without ever occasioning any metastasis of the inflammation:

℞ Alcoholis ℥viii.
Misturæ camphoræ ℥xvi. M.—Fiat lotio, modice tepefacta ab additione pauli aquæ calidæ, et partibus affectis constanter adhibeatur.

The temperature of this application should not be under 75°, nor exceed 85°; for if "either hot or cold, the intention of the remedy is frustrated." It should be applied by means of a linen compress consisting of several folds; "and the slightest and coolest covering should be superincumbent."

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* Vide *Repository*, vol. iv, p. 287.

With regard to the state of *convalescence*, Dr. Scudamore with much propriety remarks, that "careful regimen, both as to diet and exercise, early hours, and a due regulation of the bowels," so as to restrain the return of plethora, more frequently constitute all that is requisite to re-establish sound health. But when the debility is such as to require the use of tonics, he recommends the ammoniated tincture of iron in conjunction with the compound aloetic powder and soap; or a *corrective* tonic, composed of a combination of calumba, cascarilla, and rhubarb, with carbonate of soda. As an alterative, he prefers the pilula hydrargyri submuriatis composita, in a dose of five grains every other night, to the blue pill; and when œdema and weakness are considerable after the perfect removal of the inflammation, he considers the use of a flannel or calico roller "of essential importance; combined with tepid sponging and friction, either with the dry hand or the flesh brush, or assisted with a stimulant liniment."

In illustration of the principles of practice, the sketch of which we have just concluded, nine cases are detailed. In all these the symptoms are accurately and fully described; and the practice adopted displays considerable judgment, and a mind well adapted for seizing those circumstances in the train constituting the disease, the removal of which are the most likely to pave the way to returning health.

The next object of Dr. Scudamore's inquiries, is "the means of preventing the return of gout, or *the prophylactic regimen;*" which he examines under three heads, or "what relates to the general management, diet, and the occasional use of medicine."

Under the first head he observes, that in the choice of residence, "a gravelly soil in a middling level, protected from the north and the east wind, should be selected." As to clothing, flannel should be worn next the skin, at least eight months of the year; the feet in particular should be kept warm; but at the same time *hot covering* is justly deprecated. Cold bathing he regards as of doubtful efficacy, but recommends a bath of the Buxton temperature; adding,

> "From well established experience I can confidently advise, as equally safe and useful, the following daily practice, of which indeed, although I have already spoken, I shall now dwell more at length: sponge every morning the whole of the feet, between the toes, all round the ankle joints (and the knee joints also, if they have been the seat of the complaint), with salt water, or water in which salt is dissolved, in the proportion of a table spoonful of salt to a pint of water; care being taken, that the *chill* of the fluid be always just removed by the addition of a sufficient proportion of warm water.

> "The skin being wiped perfectly dry, diligent hand rubbing (the best kind of flesh brush) should be employed for as long a time as is convenient; and should invariably be continued, until a sensible glow of the skin is produced. In the whole process, one part should be finished before another is begun, lest evaporation should take place from the moistened surface in an unfavourable degree."—pp. 244, 245.

The importance of both horse and foot exercise in the country; of regular hours of rest, the daily quantity of which should not exceed eight hours; of cheerfulness and serenity of mind; and of a moderate exertion only of the intellectual faculties, avoiding severe study; is pointed out and ably enforced.

With regard to diet, Dr. Scudamore thinks the "rule of abstinence has been too much insisted upon for the gouty, and that little is often performed, because too much is required." Experience of what agrees with the habit must determine the quality of the food which is to be preferred; but error in quantity must be rigidly avoided. Animal food should be eaten once only in the day, and cooked in the simplest form, as the niceties of cookery not only provoke to a larger meal than is proper, but the stomach also becomes over excited "by the varied nature of the stimuli." The details on this part of the subject are correct and sufficiently minute; but we fear the advice of the Physician, like that of the Moralist, will continue to make but an evanescent impression when opposed by the enjoyments of the festive board, the allurements of luxurious indolence, and the various fascinations of sensual gratification; since even the severe remonstrances of frequently renewed pain fail to admonish those, who, in the lapses of their sufferings, exclaim with the poet, "Vitam faciunt Balnea, Vina, Venus."

Among the various articles of animal nutriment, our author justly prefers that which has little fat and the greatest share of muscular fibre, as it is this part "that affords the best stimulus to the stomach, and the most favourable material for digestion." We were amused with the following piece of information, which is quite new to us:

> "I learn, however, from good authority, that pork broth (quite free from fat) agrees remarkably well with very weak stomachs."—p. 256.

Salmon is stated to be the most unwholesome fish, and next to it is mackarel. Shell fish, also, is said to be hurtful; but we must refer our readers to the work itself for further particulars regarding injurious articles of food.

We accord with the opinion of Dr. Scudamore, that although fermented liquors are to be condemned, yet that the very habits which produce gout, occasion a state of stomach in the gouty, which renders "the moderate use of wine both useful and necessary;" but we must dissent from the remark, that

"in determining the exact quantity most favourable to the patient, a careful attention to his own feelings will be a sufficient guide; the object being this, that the wine should produce a feeling of comfort, without any sensible heating excitement."—p. 260.

It would indeed be difficult to conjecture what some men would consider "a feeling of comfort," in this respect.

The prophylactic medicines are chiefly warm aloetic purgatives, alkalies, and alkaline earths; the latter of which our author regards as useful, only inasmuch as they serve "to amend any wrong process in the secreting action of the kidney." He adds some judicious observations on tonics; and concludes the part of his work which refers to *Acute Gout*, by the detail of some experiments made by Mr. Astley Cooper on digestion, which were related in his lectures delivered two years ago at the Royal College of Surgeons.

Having finished the consideration of acute gout, Dr. Scudamore enters upon that "*of Chronic Gout.*" This form of the disease, we are informed, although seldom, yet occasionally occurs "in subjects in whom the acute form has never existed." It is more frequent "among women than men;" and, instead of the great toe, the seat of the swelling and pain is "the hand or wrist, or instep, and about the ankle;" but when it occurs as a sequela of acute gout, the parts originally inflamed "continue affected alternately or in conjunction." The redness, if any, is paler and more transient than in acute gout; and the bursæ and tendons are the parts most affected. The dyspeptic and hypochondriacal symptoms are very severe, being frequently attended with a chronic cough, always with great irritability of temper; and in the worst instances, a general *cachexy* takes place; all "the secretions becoming more or less vitiated; and the excretions irregular." In this state of the frame, any internal disease which is casually produced, assumes a modification more or less remarkable, in consequence of the gouty diathesis, an occurrence very apt to confuse and perplex the practitioner.

With regard to the causes of chronic gout, as it is merely a modification of acute gout, our author is of opinion, "that the difference in the agency of the remote causes" depends on the particular state of the constitution; langour and debility prevailing when the chronic form arises. A first attack of gout seldom assumes the chronic form, unless in advanced life, when there is a plethoric state of the system, joined with much debility; or in females of weak constitutions hereditarily predisposed. Dr. Scudamore conceives that the *eau medicinale* "has been the fruitful source of many cases of chronic gout."

In forming a *diagnosis*, the disease from which chronic gout is most difficult to be distinguished, is chronic rheumatism. The characteristics on which our author chiefly relies, are the greater derangement of the natural functions, and the greater degree of œdematous swelling when the foot or hand is affected in chronic gout. He conceives that although "the general disorder may often partake of rheumatism," and the two diseases may exist "in different parts of the body at the same time," yet that the gouty and rheumatic inflammation cannot exist in *the same part*. Chronic gout is more easily distinguished from nodosity of the joints.

In discussing the treatment of chronic gout, Dr. Scudamore arranges his subject under three distinct heads: The *first*, which supposes a debilitated constitution unequal to the production of an acute fit of gout, requires that "our indications be chiefly derived from the state of the chylopoetic viscera," and of the secretions. The remedies recommended are purgatives and soothing narcotics at bed-time; such, for example, as "five or seven grains of Dover's powder, or three quarters of a grain of opium, with a grain of antimonial powder;" or if the surface be not heated, the black drop, the effects of which our author has found in some instances "peculiarly satisfactory." The local treatment should be the same as in acute gout, with the after-addition of friction and a bandage. The other means consist of a combination of purgatives and tonics, such as are indicated in dyspepsia; but the use of simple tonics is judiciously advised to be postponed "until the secretions are rendered perfectly healthy." The *second* refers to that impaired state of constitution which is produced by repeated invasions of acute gout, and in which "the chronic diseased action alone can take place." In this state we are told, the purgative plan requires to be longer continued, the state of the secretions being the guide; and afterwards the tonic mode of treatment pursued. Local congestions, which were likely to occur, should be relieved by cupping; and even when spasmodic or nervous symptoms require the use of ammonia or æther, and similar palliatives, these remedies should be cautiously employed. In weakened habits, where gout is suspected, although it has not yet existed, it is too common to invite, as it were, a fit; a practice which Dr. Scudamore severely and justly reprobates.

"It is often hurtful," he adds, "and sometimes hazardous, to excite a weakened circulation into strong action; and it cannot be denied that the active means which are thus injudiciously adopted to urge the gout, may produce, instead of it, an apoplexy. I apprehend that the true method of treatment, on the occasions to which I have alluded, consists in a regular and persevering attention to the chylopoetic functions, both by means of medicine and regimen."—p. 298.

The *third* head treats of the mode of managing those local changes of structure arising out of repeated attacks of acute gout; and with which rheumatism is often blended. In these cases a narcotic and sudorific plan is recommended, with tepid bathing, particularly the Buxton bath. When contractions occur, Dr. Scudamore is of opinion, that friction, according to Mr. Grosvenor's plan, "constitutes the only remedial method which can reasonably promise success." If the lower extremities are affected with œdema, the support of a roller is absolutely necessary; with the addition of soap plaster spread on leather, where the bursal distensions are tender and painful; and this plan, in conjunction with frictions and sponging, is regarded by our author as even much more useful in gouty enlargements of the joints than repeated blistering. After giving the history of two cases of chronic gout, this part of the treatise is concluded "by a brief discussion of the treatment of *gouty concretions;*" in the early state of which, as an external application, Dr. Scudamore extols a "dilute solution of pure potass in almond emulsion," to be applied by means of friction two or three times a day; and as a constitutional remedy, a combination of magnesia and pure potass; but, as the Doctor admits, it is "very doubtful whether any medicine will be found to have a specific operation as chemical agents" on these concretions.

We have already entered so much into details, that we can do little more than notice a few of the leading points in the section on *Retrocedent Gout.* The exciting cause of this form of the disease is correctly stated to be "sudden vicissitude of temperature applied to the body generally; or cold, more or less continued, offered to the affected parts." Hence the danger, in some constitutions, of the revived practice of applying cold water to the extremities during the paroxysm even of acute gout. Cullen, and others, have taught, "that debility and spasm, and not inflammatory action, seize the internal organ in the case of retrocedent gout:" our author maintains the opposite opinion, in which we fully concur. Agreeably to this opinion also, he opposes the usual stimulating mode of treatment; instead of which he recommends, if indigestible food be the cause of the retrocession, first, to clear the *primæ viæ,* both by vomiting and purging; and then, if violent pain still continue, to exhibit without hesitation from forty to eighty drops of tincture of opium; taking care that the re-action which may follow on its abatement, do not arise to inflammation. If exposure to cold, however, be the exciting cause, we are desired to abstract sixteen, twenty, or thirty ounces of blood from the arm, to treat the inflamed bowels as in ordinary enteritis, and to divert the diseased action again to the extremities, by sinapisms, warmth, and other topical stimulants; and should the brain be the part affected, the same means must be resorted to as in apoplexy. Three cases are detailed illustrative of this practice.

Dr. Scudamore concludes his treatise with some general, yet highly interesting observations on the diseases connected with the gouty diathesis; and on the safety and importance of a free use of the lancet as a remedy in gout. The remainder of the volume is filled up with an Essay on Rheumatism; but as the author offers it only as "the sketch of a brief and general outline" of a subject which he reserves for a future volume, we also shall reserve any observations we might feel disposed to make upon it, until it appears in a more finished form.

We must acknowledge, that the performance of our critical duties have seldom been productive of so much satisfaction, as we have received in drawing up our analysis of this volume: and we have little hesitation in affirming, that whether we regard the matter generally, the arrangement, or the talent for useful practical observation which it displays, it is, in every respect, highly creditable to the author. It is undoubtedly the most scientific work on gout that has appeared in our time. With regard to the execution, as far as mere authorship is concerned, although we must allow that the language is in general correct and the style perspicuous, yet it is our duty to notice, that a few instances of inaccurate expression and bad taste occasionally caught our eye: such, for example, as the following indefinite sentence,—"a notice of many days or even longer," p. 18:—and "a mild gout took place," meaning a mild attack of gout, p. 21:—whilst in page 193 we find the following barbarous expression, "illy tolerates." Among the typographical errors, which are indeed few, we observe, in the table of first attacks, that the number occurring between fifty and sixty years of age is stated to be sixty instead of three. But these are very venial errors; and while we willingly admit that the texture of the garment is excellent, we may add, in the language of our old friend Horace,

> "Non ego paucis offendor maculis."

II.

Cases of Diseased Bladder and Testicle, illustrated with Etchings. By WILLIAM WADD, Surgeon. 4to. pp. 72. London, 1815. Callow.

THIS is not the first time that Mr. Wadd has appeared before the public as a writer on subjects connected with his profession. The present performance, however, principally claims our attention for the novelty of its illustration; the plates being wholly executed by the author, some of which are admirable specimens of the effect capable of being produced by the etching-needle; and as they all bear the date of the same year, they must be considered as very creditable proofs of industry and talent. The intention of the author will be best explained by the preface:

> " The study of Surgery has been greatly facilitated by the introduction of Engravings to illustrate morbid changes. Preparations, wet or dry, however beautifully executed, are from the time of their completion gradually losing their value, by loss of colour, change of figure, and even from the very delicacy of their materials. Add to this, their utility is much lessened by the circumscribed spot, in which only they can be examined. In the circle of the theatre they relieve the lecturer, but arrive at many of the hearers, when the subject for which they were introduced is passed, and from that period can be only imperfectly recollected, if they are not entirely forgotten. Engravings, on the contrary, may be multiplied to any number; and whilst morbid preparations require a constant interpreter, they are always accompanied with minute explanatory references.
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> " It must however be admitted, that inaccuracy in the figure, or reference, may be productive of errors, of which the common artist, taught only to study effect, is a very imperfect judge. Hence the difficulty of procuring satisfactory anatomical representations, even from the ablest masters.
>
> " The early habit of pencilling morbid appearances, of sufficient interest to deserve notice, has by degrees furnished the author with a large collection of drawings. Of these, when in compliance with the wishes of his medical friends, he has been desirous of offering to the public a selection of the most interesting, he has always been discouraged by the difficulties above mentioned. On this subject he had frequent conversations with his friend Mr. Hills, whose philosophical pursuits and pre-eminent talents as an artist are well known. This gentleman not only advised the author to undertake what it would be difficult to explain, or correct in others, but as a further encouragement, offered his own instructions, to enable him at once to secure and multiply the productions of his pencil, by means of the etching needle. Such a proposal, from one who, unrivalled in the peculiar department of his art, has, in the execution of a work representing the character of living animals, surpassed the productions of this or any other country, was eagerly adopted, and may serve as an apology for the attempt."—p. vii, viii.

The first part contains nine plates, exhibiting the morbid appearance of diseased bladder and prostate, each plate being accompanied with a short history of the case during life. It commences with specimens of calculi in the ducts and substance of the prostate gland. In these cases small portions of gravel had been passed; there was constant irritation above the neck of the bladder that admitted of no alleviation, nor could the catheter be introduced.

Next we have enlargements and ulcerations of the prostate, in some instances with thickening of the muscular coats of the bladder, the internal membrane forming sacculi containing small stones; and also a case where an uncommon thickening and contraction of the bladder arose from strictures in the urethra. A case is likewise related, where a life of abandoned profligacy was terminated by a frightful specimen of disease. A mass of malignant fungus covered the whole nates; while in the perinæum, scrotum, and groin, numerous fistulæ were formed, through which the urine passed in all directions. The plate of urinary calculi is very interesting, as it exhibits an outline of two of the largest ever known to have been found in the human bladder in this country. A case is also detailed, where a small calculus was extracted from the urethra by an incision in the perinæum.

In the illustration of the fifth plate, the author takes an opportunity of enlarging on the utility and importance of injecting the bladder, which he regrets is not more frequently resorted to, as he never saw it once applied during many years' attendance at St. Bartholomew's Hospital; and he has seen many instances in which he believes "life could not have sustained without it." His experience certainly bears very favourable testimony to its beneficial effects. On the subject of puncturing the bladder, he decides for puncturing through the rectum, which seems, indeed, to be the mode now generally adopted by practitioners.

The second part of the work relates to diseases of the testicle, the successful treatment of which illustrates very satisfactorily the opinions of the late Mr. Ramsden. Plate 14 exhibits the section of a testicle enlarged and indurated with a fungus arising from the body of the glandular substance. This seemed to originate from hernia humoralis, which was produced by the imprudent injection of a solution of the sulphate of zinc, and was also connected with strictures and an irritable urethra. By the use of efficient means for the removal of the latter symptoms, the testicle was speedily reduced in size; but before the part was in a state to admit of caustic being applied to the fungus, the patient died from pulmonary hæmorrhage.

The chapter on hydrocele contains much practical information; and the author very opportunely pays a just tribute to the fame of his master, Sir James Earle, for the introduction of "one of the most perfect operations in Surgery;" viz. the cure of hydrocele by injection.

"Whilst I had the honour of visiting with Sir James Earle, there was scarcely an operation of any kind performed by him, at which I was not present; and as to Sir James we owe the fortunate revival of this important operation, with its present improvement, it will be supposed that the cure of the hydrocele by the injecting the tunica vaginalis testes, made a very considerable part of his practice, and gave me an opportunity of seeing it under every form. In some cases after caustic, seton, incision, external applications, and other operations have failed, and even where the injection had been previously tried by others less acquainted with the practice, he was fortunate enough to succeed.

" The only instances of failure were two cases, in which an attempt was made at a further improvement in the operation; and a third wherein no irritation was produced, in consequence, as it was supposed at the time, of the servants having diluted the wine. Each of these were cured by a second operation shortly afterwards. Whether even this was necessary cannot now be ascertained, but is by no means certain.

" ' The proper object,' says Sir James Earle, ' of all operations for the radical cure of the hydrocele, is to produce such an adhesion of the distended vaginal coat of the testis with the gland, or such a consolidation of contiguous parts, as shall annihilate the cavity, in which the water constituting this disease is contained.' The same is Mr. Pott's language. ' The cure is accomplished merely by the coalescence of the tunica vaginalis with the tunica albuginea;' and Mr. Sharp, in his Critical Enquiry, tells us, that, ' upon examination of several hydroceles after cure, it appeared evidently it was wrought by an universal adhesion of the testicle to the tunica vaginalis.' Such, I believe, were the sentiments of every surgeon of eminence, till Mr. Ramsden ventured to dissent from the established doctrine; asserting that the obliteration of the cavity of the tunica vaginalis testis, was not essential to the cure, and that it did not happen unless the curative process had been carried to unnecessary severity.

" Among my notes, is a memorandum which very much confirms Mr. Ramsden's opinions. A gentleman underwent the operation in May 1799. He left town at the end of June. The beginning of July he stated by letter that the hydrocele had returned as large as before the operation; and in the middle of the next month, he wrote word that it had entirely disappeared. The operation had therefore excited a new action in the parts, and though the effusion of fluid had returned, yet the absorbents had recovered their function.

" That adhesion takes place between the tunica vaginalis and testis, where there has been a certain degree of inflammation, has been repeatedly demonstrated; and that it is the general effect of the usual mode of injection; but if the cure can be accomplished by less irritation, and without any change in the parts from their original formation, many might be inclined to undergo it, who would not be willing to hazard an operation under any other circumstances.

" Mr. Ramsden has not confirmed his theory by dissection; but brings abundant proof of transparency in the scrotum after the operation, and on that fact its validity chiefly rests. He attached great importance to the ascertaining the transparency of hydrocele, and in all cases made it his first object of inquiry, thinking that the surgeon who neglected this 'grand characteristic,' gratified his vanity at the risk of his patient's security.

"The usual injection is two parts wine to one of water; or if the tunics are thin, the testicle enlarged, or any circumstance requiring caution, it is made of equal parts, wine and water. Even the latter proportion is sometimes productive of considerable pain and tumefaction.

"With a view of following Mr. Ramsden's plan of curing by only exciting a new action, with as little pain as possible, I have so lessened the quantity of wine, that the irritation produced has been such as not to detain the patient at home, after the day on which it was used; and I am inclined to think that very little irritation of the sacculus is sufficient for the cure of most hydroceles, that do not exceed half a pint in the quantity of fluid, nor six months from their first appearance."—p. 48—52.

In the conclusion Mr. Wadd gives two very excellent specimens of the hernia congenita, and describes somewhat at large the peculiarities of the testicle.

This work must be considered as a valuable record of important facts and observations relative to a class of diseases that are "among the most distressing of those which do not necessarily shorten life." The practice of taking sketches of morbid parts, and registering facts connected therewith, ought to be assiduously cultivated by all who are desirous of contributing to the advancement of surgical knowledge. Were this more frequently resorted to, a mass of voluable data would be accumulated, that might hereafter serve, when digested and methodized, to throw light upon some of those obscure cases that in every practice must occasionally occur. We cannot but applaud Mr. Wadd's very commendable attention to this important point, and we hope at some future time to see more of the contents of his port-folio and memorandum book.

III.

A System of Physiological Botany. By the Rev. P. Keith, F.L.S. &c. &c. pp. 104. 2 Volumes. Plates. London, 1816. Baldwin and Co.

Elemens de Physiologie Végétale et de Botanique. Par C. F. Brisseau Mirbel, de l'Institut. pp. 925, et un Tome des Planches. Paris, 1815.

We have so often stated our opinion of the necessity of the study of Botany in the formation of the perfect medical character; and have been so often urged by correspondents to the performance of our pledge to analyse these works*, that, although they are not strictly medical, yet, we think no apology necessary for bringing them before the profession.

These volumes may, in some degree, with the exception of Darwin's Zoonomia and Smith's Introduction, be regarded as the first of their kind; for although many facts in the physiology of vegetables were known at as early a period as that of Theophrastus, yet they were so little regarded, that for a long time they were scarcely kept in remembrance; and no new facts were added to the stock. Any important improvements, indeed, in this branch of knowledge is due to the moderns; but we are not perfectly satisfied, that enough has been accomplished to permit the formation, even at this time, of a *System of Phytology.* The works which are before us, however, afford a connected view of all that is known on the subject; and, as such, we proceed to the task, which we have assigned to ourselves, of endeavouring to make our readers acquainted with their respective value.

Mr. Keith commences his work by an examination of the external structure of the plant, or those parts which are obvious to the eye in the natural condition of the vegetable; and then of the internal structure, or those organs which are discoverable only by dissection. The aid of chemistry is next called in, to ascertain, by the analysis of the vegetable products, "the character of the nourishment on which the plant naturally feeds;" and, these preparatory steps being understood, the student is supposed to be able to understand the explanation of "the functions of the several organs, and the phenomena of vegetable life." The last object of Mr. Keith's arrangement involves "the phenomena consequent even upon vegetable death, as comprehending the process by which the vegetable substance is ultimately reduced to the primary and organized principles of which it was originally composed."

M. Mirbel extends his view of the subject a little farther. He divides his work into two parts: the first of which contains the *Principles of the Anatomy and Physiology of Plants;* and the second, what he terms *Notions fundamentales de la Botanique proprement dite,* comprehending the History of the Rise and Progress of the Science, the terminology, and the analysis of the artificial and natural methods of arranging plants, proposed by Tournefort, Linnæus, and Jussieu. He commences his first division by a dissertation on the characteristics which serve to distinguish plants from other living beings and inert matter; then examines their organic structure; their state in the seed, embracing the doctrines of germination; their conservative organs, and the functions connected with these; and ends this part of his subject with a view of the chemical composition and the nutrition of the plant. Having ascertained the nature of those circumstances on which the preservation of the individual depends, M. Mirbel next examines the generative organs and their functions; fructification and the dissemination of seeds; and the diseases and death of plants. The ninth section of this division is a distinct treatise on cryptogamic and aganic plants; and the tenth, which terminates the physiology, contains an exposition of the more important phenomena connected with the presence of vegetables on the surface of the globe.

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* Vide *Repository,* vol. vi. p. 264.

It is difficult to determine which of these methods of arrangement is to be preferred: that of Mr. Keith has the advantage of simplicity, and by passing from that which is obvious to that which is more obscure, is perhaps the best adapted for the young student; whilst that of M. Mirbel being more philosophical, entering farther into particulars, and combining the physiology with the details of structure, has greater charms for him who has already some acquaintance with the subject. It is not, however, on this account that we propose to adopt Mr. Keith's arrangement in our analysis; but because his work being in English is more likely to fall into the hands of the majority of our readers.

In entering upon the examination of the structure of plants, Mr. Keith divides the whole vegetable race into two classes, *Perfect Plants* and *Imperfect Plants;* and treats of the organization of each in the order in which they have been named. Of the division of the parts of perfect plants he adopts that which regards them as corresponding to their respective functions in the economy of vegetation; or into *conservative organs*, including the root, trunk, branch, leaf, and fruit; and *reproductive organs*, including the flower, the fruit, and the seed. The same arrangement is adopted by M. Mirbel in describing the organs.

Mr. Keith defines the root to be

> "that part of the plant by which it attaches itself to the soil in which it grows, or to the substance on which it feeds, and is the principal organ of nutrition."—p. 33.

The definition of M. Mirbel differs only by the mention of the radicles, "petites ramifications de la racine, qui sont autant de bouches aspirantes." Both authors point out various exceptions to the general definition; but those noticed by M. Mirbel are both more numerous and more interesting:

> "Almost every part of a vegetable," observes this author, "is capable of throwing out roots: the points of the leaves of Aspidium *rhizophyllum*, Asplenium *rhizophyllum*, &c.; the joints of the stalks of the grasses; the entire surface of the stems of Bignonia *radicans*, the Ivy, &c.; the base of the leaves of Justicia *lutea*, Ruellia *erecta*,

the orange, &c.; and the extremities of the branches of all ligneous plants."—p. 86.

We have lately seen a striking example of the disposition of plants to throw out roots from the stem and branches, when the soil is not capable of affording a sufficient supply of nutriment, in a Portugal laurel in Lord Arden's grounds, at Nork House, Surry. The plant is growing in a kind of cave formed by a chalk bank, on the summit of which stands a majestic beech. The leaves of this laurel, although not very numerous, are very healthy; and along almost every branch the bark is cracked and raised by thousands of short spongy radicles, which protrude themselves through it. The real roots run nearly horizontally on the surface of the chalk, on which there is scarcely any soil: and as the shade of the beech both keeps the sun from the spot, and preserves the air moist, these radicles are absorbing organs, by which the plant receives from the atmosphere what the soil cannot supply to the roots.

Mr. Keith classes all roots under the five following heads: 1. The spindle-shaped root; 2. the bitten or truncated; 3. the fibrous or capillary; 4. the bulbous; and, 5, the tuberous. M. Mirbel has the same number of divisions; but instead of the bitten or truncated, which is improperly enumerated as a species by Mr. Keith, being undoubtedly a variety of the spindle-shaped, he has added the creeping, " les progressives." Both authors retain the terms bulbous and tuberous roots, although aware that the former at least is improper. We are decidedly of opinion that neither can be strictly regarded as roots, and that both should be described as *appendages* to the fibrous root. In no example of a real tuber with which we are acquainted do radicle fibres proceed from the tuber itself; but those which supply the parent plants are attached either close to the base of the stem, as in the orchideæ, or to some other part, as for example, the descending candex in the Jerusalem artichoke (Helianthus *tuberosus*); whilst the roots which proceed from tubers, when they begin to grow, are productions of the gem or turion upon their surface. Both bulbs and tubers are Hybernacula, and supply nutriment for the support of the lateral progeny of the plants, to the roots of which they are appended, in the same manner as the cotyledons of seeds supply nutriment to the seminal progeny, before they have thrown out roots capable of absorbing it from the soil.

Mr. Keith concludes this section on roots, with some brief remarks on their lateral fibres, and the secondary or annual production of capillary fibres attached to these; the direction, substance, colour, odour, taste, size, duration, and medical virtues of roots. M. Mirbel extends his inquiries to the physiology of these organs; but as we shall have opportunities of noticing his opinions under different heads of Mr. Keith's arrangement, we have only to remark at present that he seems undecided whether to admit or reject the assertion of Brugmans, that roots have particular excretions. This author conceived that he had seen drops exuding from the points of the radicle fibres of some plants during the night, which proved destructive to other kinds of plants when they were touched with them; and on this circumstance endeavoured to explain the antipathies of plants. The subject of vegetable antipathies is curious and interesting; but it does not receive much elucidation from the opinion of Burgmans, which we believe is regarded as unsupported, if not entirely visionary, by the majority of phytologists.

Mr. Keith's next section contains the description of the trunk; the varieties of which he classes under the heads *stem*, *culm*, and *stipe*. M. Mirbel first points out the distinction between the stem and the scape, or flower-stalk, which in some instances, as the Banana for example, from its bulk and other circumstances, may readily be mistaken for a stem: and divides the latter into four species, the *trunk*, the *stipe*, the *culm*, and the *stem* (tige), properly so called, under which he places the twining stem, and many others which cannot correctly be arranged under the three former divisions, such as that of the Iris, Sempervivum *tectorum*, &c. The descriptions of these parts by either author, do not require to be particularly noticed, except to point out the mistake of Mr. Keith regarding the growth of the stipe, which he says increases in height only, "the diameter of the first year being the maximum." As a general rule, this opinion has been proved to be erroneous by M. du Petit Thouars*. The stipe of the *Dracæna*, and those of the Aloes and of the Yucas, increase both in height and breadth: that of the *Dracæna*, in particular, to such an extent, that though it does not exceed an inch in thickness until it rises fifteen feet in height, yet, after that time, it gradually encreases, and finally becomes a trunk which two men cannot embrace. The cause of this encrease of diameter, as pointed out by M. Petit Thouars, we shall have an opportunity of examining, when we come to notice the theory of developement of vegetable organs.

In describing the branches, both authors confine their remarks to the disposition, position, and size of these extensions of the trunk. Their horizontal expansion is truly astonishing in some trees: in Adansonia *digitata*, or Calabash tree, for example, they often extend from forty to fifty feet in length, forming a diameter of upwards of a hundred feet!

The description of the form, structure, position, &c. of the

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[*] *Vide Essais sur le Végétation,* par A. Aubert du Petit Thouars, p. 1.

leaf, follows that of the branches. Mr. Keith has not distinguished by any particular term the secondary petioles, or those small leaf-stalks which support the leafets in compound leaves. Mirbel, following Decandolle, names them petiolules, and describes the articulations by which they are generally united to the primary leaf-stalk, or petiole, which Mr. Keith merely casually noticed :

> " The structure," says Mirbel, " of the petiolar articulation is very simple. The vascular bundles, instead of running separately, as in the rest of the petiole, unite into one, and thus produce an articulation which allows the leaf to perform certain hinge-like and turning movements (mouvements de ginglyme et de torsion). The leaves of Robinia *pseudo-acacia*, the Mimosas, Hedysarum *gyrans*, the Cassias, and almost all the leguminous plants, are composed of leafets, petioles, and articulated petiolules."—p. 149.

The most remarkable leaf in point of substance, that of the Hydrogeton *fenestralis*, an aquatic plant, growing in Madagascar, is noticed and figured by Mirbel. It has no cellular matter filling up the interstices of the vascular web, but the messes are quite open, so that the whole has the appearance of lace-work, or a dissected leaf.

The second chapter of Mr. Keith's work is intitled *Conservative Appendages*, under which term he comprehends *gems*, *glands*, *tendrils*, *stipulæ*, *armatures*, *pubescence*, *anomalies*.

Gems he divides, following Gærtner, into simple and compound; the former including the *Propago* and *Gongylus*, which he does not describe; the latter the bulb and bud. Mirbel has four divisions of these organs: " 1°. la bulbe ou l'ognon; 2°. le turion; 3°. la bulbille; 4°. le bouton proprement dit." The bulb, according to Mr. Keith's definition, is a compound gem, situated either upon the root or the stem and branches, " from which it ultimately and spontaneously detaches itself, and forms a new individual. If this definition were correct, the bulb should be arranged as a reproductive organ; but the fact is, the individual is not formed by the bulb, but in the bulb, as the natural progeny of the plant to which it is attached. M. Mirbel more correctly regards it as a nourishing organ; le nourrice de rejettons, seated upon vivacious roots, and inclosing the rudiments of leaves and flowers, the protrusion of which exhausts the bulb. In describing the *radicle bulb*, Mr. Keith admits the impropriety of regarding it as a root. The *caulinary bulbille* of Mirbel is the bulb of Mr. Keith; and is described by him as attached to the axil of the leaves in some plants, and in others at the base of the umbel. Mirbel further adduces the fact of bulbilles being found in the seed of the vessels of some plants; as, for example, those of Agave *fœtida*, in which the young plants are protruded from the bulbs, whilst they still remain in the pericarp attached to the plant.

Mr. Keith, in the section upon *Buds*, notices only the axillary and terminal situations of these parts; and has fallen into the common error of supposing that trees and shrubs which bear buds in cold climates do not produce them in hot climates. Mirbel is more full on this part of the subject, and gives examples of the various peculiarities in the situation of the bud: thus in Robinia *pseudo-acacia*, and many leguminous trees, the buds are developed in the substance of the stem; and in the genus Platanus, and the Sumachs, they are enclosed within the dilated base of the leaf-stalk.

Mr. Keith describes six varieties of *glands*, the miliary, the vesicular, the scaly, the globular, the lenticular, and the cup-shaped; M. Mirbel enumerates the same, except the scaly, and adds the utricular, the papillary, and the floral or nectaries. We doubt the propriety of regarding as glands dilatations of the epidermis, such as occurs in the Ice plant, which Mirbel has quoted as an example of the utricular variety; he, however, properly ranks the nectary amongst these organs.

The sections on *tendrils* and *stipulæ* require no particular remark. In noticing the disappearance of the thorn by cultivation, Mr. Keith observes, that the *prickle* is permanent, and hence may be employed " for the purposes of specific discrimination:" Mirbel, however, suggests that it has been remarked that roses lose their prickles when they are cultivated in sand. Our experience does not enable us to decide the question. Mirbel describes minutely the structure of hairs on plants, and notices the opinion, in which he accords, that they are absorbing, excretory and secreting organs: Mr. Keith describes their external appearance only, and notices the use that has been made of them in distinguishing the different species of *mint* by Sir J. E. Smith; those of *myosotis* by Dr. Roth, and by Mr. Brown in his elucidation of the Natural Order of the Proteaceæ of Jussieu."

Under the head *Anomalies*, Mr. Keith describes the trap-like appendage, which terminates the leaves of Dionœa *Muscipula*, the " flattened concave and somewhat heart-shaped limb," attached to the rim of the cuculated leaf of Sarracenia *purpurea*, the still more curious pitcher-shaped appendage, which hangs on the thread-like production of the apex of that of Nepenthes *distillatoria*, and the vesicles attached to the roots and leaves of some aquatics.

The Third Chapter of Mr. Keith's arrangement treats of the *Reproductive Organs*, which include the flower with its footstalk and receptacle, and the ovary or fruit.

The definition of the *flower* by both authors is in some degree objectionable; Mr. Keith informs us, that

> " The flower, like the leaf, is a temporary part of the plant, issuing generally from the extremity of the branches, but sometimes

also from the root and even leaf; being the apparatus destined by Nature for the production of the fruit, and being also distinguishable for the most part by the brilliancy of its colouring or the sweetness of its smell."—p. 85.

Now we think this definition redundant in two points: 1. In noticing the parts of the plant on which the flower is seated, which, *en passant*, is not correct, the flower being as generally axillary as terminal; and, 2. In noticing the brilliancy of colouring and sweetness of odour; neither of which, any more than the former circumstance, being essential to the flower. The following is Mirbel's definition:

> " La fleur est cette partie locale et transitoire végétal, existant par la presence et la jeunesse d'un ou de plusieurs organes mâles, ou bien d'un ou de plusieurs organes femelles, ou encore des organes mâles et femelles rapprochés et groupés, nus ou accompagné d'invellopes particulières."—p. 217.

The expression "la jeunesse," according to our comprehension of the term, is certainly incorrect; as the sexual organs must have attained their full growth and adult age, before they can perform their functions; and until that is completed, they still constitute the flower.

After noticing the various situations of the flower upon plants, and the terms by which these are designated in botanical language, the parts which constitute the flower are described in detail. Mr. Keith confines the term *calyx* to the perianth, the glume, and the scale; Mirbel, on the other hand, regards the calyx as a species of the perianth, which he divides into simple and double: and certainly perianth is more properly the generic appellation of the floral envelope than calyx; and although he mentions M. Ventenat's opinion regarding the impropriety of the terms, superior and inferior calyx, yet he does not appear to accord with it. Ventenat justly maintains, that when that part is thought to be superior, it still originates beneath the ovary; but adheres so closely to the fruit as to be scarcely distinguishable from it.

In describing the corolla, M. Mirbel notices the difficulties which not unfrequently occur regarding a part of the subject overlooked by Mr. Keith; that is, in determining whether that organ be monopetalous or polypetalous; and states it as his opinion, that in general we may be guided by the axiom, "*tot petala numeramus, in quot resolvitur flos deciduus.*" The decision of this point is a matter of indifference to the inquirer into vegetable physiology, but of some importance to the systematic botanist. It is a curious fact, noticed by Mirbel, that there is no corolla of a black colour; those which have been *generally* denominated black being of a dark purple hue. With regard to the discriminating characters of the corolla, by which it may be distinguished from the calyx, when there is one floral envelope only; Mr. Keith, after noticing the opinions of Ray, Linnæus, Ventenat, and others, concludes that "our best guide, after all that has been said on the subject, is, perhaps, analogy;" when the solitary envelope resembles a calyx, then it may be called calyx, and corolla when in its texture and colour it resembles that organ. Mirbel, like Jussieu, has adopted the opinion of Linnæus, that the calyx is a continuation of the outer bark of the flower stalk, and the corolla of the inner bark, an opinion which Hedwig has satisfactorily demonstrated to be erroneous.

In describing the *stamens*, although Mr. Keith notices their conversion into petals, yet, he has overlooked the remarkable fact, that one or more of the stamens are always abortive in some species of plants; as for example, one in *Chelone*, *Martynia*, *Sesamum*, *Antirrhinum*, two in *Pinguicula*, *Monarda*, &c., three in *Gratiola*, *Bignonia*, *Pelargonium*, four in *Curcuma*, and five in *Erodium*, *Herniara*, &c. Mirbel remarks that the defect is rarely complete, as the filament of the defective stamen generally supports something which resembles a rudiment of an anther. The term *filament*, although sufficient to designate that part of the stamen which supports the anther, when it has a thread-like form and supports one anther only, is certainly not applicable to every form of the stamen. Mirbel, to remove this objection, proposes to use the term *filament* (filet) when it supports one anther only, and *androphore* when it supports several; but it may be properly objected to this distinction, that, although the term androphore is correctly enough applied in the latter case, yet, that the simple filament bearing a single anther is also actually an androphore. Both authors notice the opinions of Gærtner, Hedwig, and Koelreuter, regarding the form and structure of the pollen, and Mr. Keith endeavours to reconcile their discordance by supposing that the descriptions being taken from the pollen of different species of plants, each may be respectively correct: but Mirbel conceives that, in general, conjectures only can be formed of the organization of these corpuscules, their minuteness placing them beyond the reach of anatomy. In Passiflora serrata, however, and a few more plants, in which the pollen is capable of being examined, it is apparently chiefly composed of cellular matter covered with a thin diaphanous epidermis, in which the seminal fluid is contained as in a sponge. We believe that Mr. Keith's opinion is correct, that the explosion of the globules on the moist stigma is the more common phenomenon, although there may also be some from which the seminal fluid slowly exudes, as described by Koelreuter.

The description of the female organs by either author, requires little notice. Both have properly adopted the term *ovary* in preference to *germen*, to express the early state of the seed vessel: and Mirbel endeavours to render more accurate the language of systematic botany in regard to the relative situation of the *style*, by determining with precision the apex of the ovary. This, he observes, may be determined either in reference to the organization or the mass of the ovary; the first fixing the *organic apex*, which is always at the base of the style: the second, the *geometric apex*: which is the most elevated point of the surface of the ovary, supposing a central axis passing vertically through it.

Under the head *Receptacle*, Mr. Keith enters into a long discussion on the merits of the objections, which Mr. A. Salisbury has made to the perigynous insertion of Jussieu, which, as it cannot interest, or even be well understood by the student, is certainly out of place in an elementary work.

After describing the different forms of inflorescence, Mr. Keith concludes his account of the reproductive organs by the description of the fruit; in which he follows the arrangement of Gærtner, whom he justly regards as the best authority on this subject. Having taken a view of its general and external modifications, comprehending figure, size, and contexture, and whether covered or naked, or single or conjugate, he then considers the fruit as composed of constituent parts, exterior and interior, or of the pericarp and the seed.

In the *pericarp*, which "generally constitutes the principal mass of the fruit, Mr. Keith notices the form, contexture, and opening of the valves, the number of cavities, the partitions, cells, and the attachment of the seeds to the central receptacle or placenta: but besides noticing these parts, in the general description of the pericarp, M. Mirbel observes, that its texture often differs in relation, as it is exterior or interior; in which case he adds:

> "La première, qui forme l'écorce du fruit, est la pannexterne; l'autre, qui circonscrit la cavité péricarpienne, est la panninterne."—p. 327.

With regard to those seeds which are destitute of a pericarp, and said to be naked, Mr. Keith, differing from Gærtner, who was inclined to regard the cuticle in these instances as the pericarp, observes:

> "But the question ought not to be whether a cuticle is in any case to be regarded as a pericarp, but whether or not all seeds are furnished with a pericarp distinct from their own proper integuments. The cuticle is no doubt a covering, but it is not a pericarp; and the seed that has no other covering is with propriety denominated naked."—p. 157.

Following Gærtner, he enumerates eight species of the pericarp: 1. The *capsule*, a dry, membranaceous pericarp, opening when ripe in some definite manner; of which there are four varieties; *a*, the utricle, a small evalvular, bladder-like capsule, consisting of one cell and one seed, as in *Clematis*: *b*, the Samara, a compressed, leathery, evalvular capsule, of one or two cells, furnished with a membraneous border or wing, and bursting only by the germination of the contained seed, as exemplified in ash and elm keys: *c*, the bag, an elongated, leathery, evalvular, unilocular capsule, opening longitudinally and laterally, as in *Pæonia*: and *d*, the coccus, a dry, elastic capsule of two or more lobes united, each forming a cell, and containing a seed; "but separating when ripe from the axis, and bursting longitudinally into two valves united at the base; as in *Euphorbia*, a tricoccous plant." 2. The *Pome*, a fleshy, evalvular pericarp, enclosing a capsule of five cells; as in the apple and pear. 3. The *Berry*, a soft, pulpy pericarp, containing one or more seeds; but not separating into regular valves, as the currant and gooseberry. The fruit of the cucurbitaceous plants is a variety of the berry, and has received the name of *Pepo* from Gærtner. 4. The *Nut-shell*. 5. The *Drupe*, a soft and pulpy, evalvular pericarp, enclosing a nut, as the cherry, peach, &c. The part of this definition which states the drupe generally to be evalvular is erroneous, as the peach and some others of this species of pericarp, open spontaneously, and in a determinate manner. 6. The *Silique*, defined by Mr. Keith, "a dry and elongated pericarp, consisting of two valves with two opposite seams, to which the seeds are alternately fixed." Instead of two opposite seams, an expression which conveys no meaning, the definition should run thus: "and divided longitudinally by a central dissepiment, to which the seeds are alternately attached." The varieties of this species are the silicle, exemplified in *Thlaspi*, Shepherd's-purse, and the silique, of which *Chieranthus*, Wall-flower, is an example. 7. The *Legume*, a dry, elongated, bivalvular pod, with opposite seams, to one of which the seeds are attached, as in the pea. Mr. Keith objects, but we think without sufficient reason, to the term *Lomentum*, which has been applied to a variety of the legume opening transversely, by means of joints, each of which forms a distinct cell containing one seed. 8. The *Strobile*. We think it doubtful whether the strobile can be correctly regarded as a pericarp. It is rather a receptacle, each seed attached under its scales having its individual pericarp, which may be classed with the fourth species, or Nut-shell. The fir-top is the best example of the strobile. Mr. Keith's description of the peculiarities of form and structure of each of these species of fruit is accurate and perspicuous.

In no part of the subject do our two authors differ so widely as in the description of the fruit. Mr. Keith, as we have already shewn, follows the arrangement of Gærtner, while M. Mirbel has formed a classification of his own, of which we shall now endeavour to give our readers a brief sketch. He is of opinion, that in the present state of the science, fruits cannot be classed in a natural method; hence an artificial one must be adopted. He divides all phenogamic plants*, in reference to their fruit, into two great classes, each of which is subdivided into orders and genera.

The first class which he denominates GYMNOCARPIENS (Fructus Gymnocarpei), contains seven orders:

Order I.—FRUITS CARCERULAIRES (F. carcerulares), those fruits which have a single and generally dry pericarp, that does not open, although it sometimes has apparent sutures. The genera are three in number: 1. *La Cypsele*, synonymous with the naked seeds of Linnæus, and exemplified in the sunflower, the goat's-beard, &c.; 2. *Le Cerion*—the husks of the seeds of the Cerealia, and those of the gramineæ; 3. *La Carcerule*, comprehending all the fruits, which although properly belonging to the order, yet cannot be classed under the two former genera.

Order II.—FRUITS CAPSULAIRES (F. capsulares), or fruits which are in general dry, valvular, and opening by the disunion of their valves, but never dividing into distinct cocci. The order contains four genera:—1. *Le Legume;* 2. *La Silique et la Silicule;* 3. *La Pyxide;* 4. *La Capsule.* The two first and the last we need not notice; the third, *la Pyxide*, is thus defined by M. Mirbel, "a monocephalous, regular fruit, with its pericarp not adhering to the perianth, or only by its inferior portion: bivalvular, one valve being inferior, and remaining fixed to the receptacle; the other superior, and opening in the same manner as the lid of an urn or a soap-box (boite à savonnette). The capsules of the Plantain, Henbane, Anagallis, &c., are examples of the *pyxide*.

Order III.—FRUITS DIERESILIENS (F. dieresilei), dry, regular, and almost always monocephalous fruits, the Cocci of Linnæus, or fourth variety of the capsule of Gærtner and Mr. Keith. The genera of this order are three: 1. *Le Cremocarpe*, exemplified in some of the umbelliferæ, as Smyrnium *olusatrum*, and Chærophyllum *aromaticum;* 2. *Le Regmate*, to which belongs the fruit of the Euphorbiæ, and some species of other families, the capsules of which are elastic cocci; and, 3. *La Diérésile*, intended to comprehend all the fruits of the order, which do not belong to the two other genera.

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* Plants in which the sexual are evident, derived from φαινω, I shew, and γαμος, marriage.

Order IV.—Fruits Etairionnaires (F. etærionares), polycephalous, irregular capsules, opening by a posterior valve. This order contains two genera: 1. *Le double Follicule*, exemplified in Asclepias *nigra*, and 2. *L'Etaireon*, exemplified in the Ranunculus, Geum, and similar fruits, consisting of many capsules arranged as it were round a simple axis.

Order V. Fruits Cenobionnaires (F. *cenobionnaires*), of which there is one genus only, *Le Cenobion*, which is a regular fruit, divided to its base into many dry or succulent unilocular acephalous pericarps, which have no organic summit, *i. e.* do not bear styles, the single style of the fruit being seated upon the receptacle. The fruit of Borage and Bugloss exemplify this order and genus.

Order VI. Les Drupaces. This order also contains one genus only, *Le Drupe.*

Order VII. Fruits Bacciens, (F. *baccati*) synonymous with the berries of Mr. Keith. The order consists of three genera; 1. *Le Pyridion*, corresponding to the Pome of Gærtner; 2. *Le Pepon;* and 3. *La Baie*, or Berry, which comprehends fruits of a very different nature, such, for example, as the grape, the succulent capsule of Atropa *belladonna*, and the capsules of Tobacco and of Coffee.

Such are the gymnocarpian fruits: the second class of his arrangement is named by M. Mirbel, Angio-carpien (Fructus angio-carpei), and contains one order only, consisting of the four following genera: 1. *Le Calybion*, which is thus defined; "a fruit composed of a cupel (une cupule), of a variable form, and of one or more carcerulæ, contained, either wholly or in part, in the cupel; as the acorn. 2. *Le Strobile ou Cone.* 3. *Le Sycône*, which is an involucre of the form of a salver, a cup, or an urn, varying in its consistence, and bearing carcerulæ, or small drupes upon a clinanthe*, which lines the whole of its interior; as in the Fig and Dorstenia. 4. *Le Sorose*, a compact combination of fruits, in the form of a spike or catkin, each fruit is covered by a succulent floral envelope, and adhering to the adjoining fruit, so as to resemble a mamellated berry; as exemplified in the Pine apple and Bread fruit."

Previous habit may have prejudiced us in favour of Gærtner's arrangement; but, while we admire the ingenuity displayed in Mirbel's, we cannot avoid remarking, that this classification of fruits wants that simplicity which constitutes the great excellence of its rival.

Mr. Keith concludes this section by a succinct but clear description of the exterior of the seed itself, its figure, size, surface, colour, position, &c. The number of seeds produced by a single flower or a plant, is in some species truly astonishing: a single capsule of the *Vanilla*, according to Barton, contains from ten to fifteen thousand seeds; Ray counted the seeds on a single plant of Tobacco, and found them to amount to 360,000; Dodart obtained from an elm 529,000; and Mr. Keith states, that "a single stalk of spleen-wort has been thought, by estimation, to produce at least a million of seeds."

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* "Un pedoncule, élargi à son sommet en un plateau chargé de plusieurs fleurs sans pédicelle apparent, reçoit le nom de clinanthe." —*Elemens de Physiologie Végétale*, tom. i. p. 273.

The fourth chapter of the system is intitled *Reproductive Appendages*, and treats of those supernumerary parts which are altogether peculiar to the reproductive organs.

The first section decsribes the *appendages of the flower*, which comprehend the involucre, spathe, bracte, and nectary. Mr. Keith confines the term *involucre* to the floral leaf or leaves situated at the base of the inflorescence of umbelliferous plants; but M. Mirbel, correctly in our opinion, extends it to the same parts when under a single flower, as in Anemone *nemerosa*, and Clematis *calycina*, which Mr. Keith thinks simply bractes. Both authors justly regard the *spathe*, also, as a floral leaf, and reject the definition of Linnæus, which ranked it as a calyx. The *Bracte*, properly so called when situated near the flower, may readily be taken for a calyx, as in Nigella and some of the Hellebores; but Mr. Keith points out the following easy method of avoiding this mistake, by observing its duration. It is a bracte when the duration

> "is equal to that of the other leaves of the plant; whereas the calyx either fades with the flower, or at latest when the fruit has reached maturity."—p. 178.

With regard to these three floral appendages, the two former being evidently modifications of the latter, we can discover no reason why the involucre and spathe should not be classed as varieties of the bracte, in the same manner as the utricle and samara are set down as varieties of the capsule.

In describing the *nectary*, Mr. Keith enters into a defence of Linnæus, who has been not unjustly censured for uniting under this term "all such supernumerary appendages of the flower as cannot be reduced to one or other of the foregoing heads," instead of confining it to such parts as secret honey. Now we conceive, that the confusion thus introduced by the Swedish naturalist, were it allowed to remain, would be not only extremely injurious to the progress of phytology, in which descriptive terms should always be accurately employed, but also to systematic botany; and we accord with M. Mirbel, who properly limits the term, when he remarks on this very subject, "du moment que l'on confond les organs on détruit les bases de toute bonne classification."

The *appendages of the fruit*, which form the subject of the second section, are divided by Mr. Keith into those of the ovary and those of the seed. Under the first head he ranks all parts of the flower which become indurated and remain permanently attached to the ovary; but we cannot agree with him in regarding as such the succulent receptacle of the fig or that of the Yew tree, as in these and similar cases the altered receptacle is as much the fruit as the fleshy part of the apple or the peach. An instance, however, of the altered receptacle being truly an appendage, although unnoticed by both Mirbel and Mr. Keith, occurs in the fruit of Acajuba and Anacardium, in which the nut is attached by a single point to the extremity of the enlarged succulent receptacle. The bloom is properly regarded as an appendage. We extract the following account of the singular fruit of Cyamus *Nelumbo*, quoted from Smith's Exotic Botany, because it may be new to many of our readers.

> " The receptacle, which is of an inversely conical figure with a broad and flat base, is excavated into a number of small and hollow cells, in each of which is lodged a seed or nut protruding by its upper extremity through the orifice of its cell, and thus consequently veiled. But at the period of the maturity of the seed, this curious and singular receptacle, laden with fruit, separates from its supporting stalk, and floats down the stream in which it grew; the seeds often germinating, and the young plants shooting as it floats along, giving the whole a slight or fancied resemblance to a *cornucopia*. And hence perhaps the origin of its mythological celebrity, having been regarded among ancient and eastern nations as the emblem of fertility."—p. 187.

The *appendages of the seed* are more numerous than those of the ovary. Mr. Keith enumerates under this head the pellicle, exemplified in *Salvia;* the aril, in *Euonymus;* the down, in *Dandelion;* the tuft, in *Willow herb;* the tail, in *Clematis;* the beak, in *Scandix;* and the wing, in *Buck-wheat;* to which M. Mirbel adds, the crown, (la couronne); which is merely the segments of the persistent calyx as seen on the apple, pear, or quince. The mace on the nutmeg is considered by Mirbel as being also an aril; and Dr. Smith even regards as such the envelope of the seed of carex; but Mr. Keith censures both opinions as improper, and as contrary to the definition of the part, which is merely a coat formed by an expansion of the umbilicus, as defined by Linnæus, Gærtner, and even Dr. Smith himself. The description of the external structure and connections of these parts, is ample and satisfactory in both the works before us.

The Second Part of the First Book of Mr. Keith's arrangement, treats of *Imperfect Plants.* Mirbel has a correspondent section, intitled "*des Cryptogames et des Agames*;" but besides describing their form and structure, he enters very minutely into the consideration of their physiology. We have, however, to confine ourselves to the arrangement of the *System*.

The first chapter contains the description of the conservative and reproductive organs of *Ferns*. In describing the modifications of the root, Mr. Keith corrects an error, fallen into by Sir J.E. Smith, who states, that the root of common brake, Pteris *aquilina*, is spindle-shaped, a mistake which has occurred from the plant being pulled up by the hand. It is in fact a creeping horizontal root, running about four inches below the surface, and sending up the frond at intervals. We cannot accord with Mr. Keith's term of trunk, as applied to the stipe of the fern. In noticing the fructification, the opinions of Hedwig and Bernhardi regarding the stamens and pistil are given; and that of Sir J. E. Smith regarding the integument, termed *Indusium*, which covers the capsules in the dorsiferous Ferns, being the only criterion for determining the natural genera of these plants.

The Second Chapter treats of the *Mosses*. It is a curious fact, noticed by Mr. Keith, that none of the leaves of this minute natural family are petiolate; and, which is still more remarkable, that the Buxbaumia *aphylla* of Schmidel is the only known species wholly destitute of leaves. In describing the fructification, both authors trace the progress of discovery of the reproductive organs, from the first hint by Micheli, to the clear and complete exposition of the subject by Hedwig. Mr. Keith first notices the barren or male flowers, and then the fertile or female; and both authors follow Hedwig in their details.

The Third Chapter is on the *Hepaticæ*. Mr. Keith differs from Hedwig in classing these plants with the Mosses: but both he and Mirbel follow that acute observer in his description of their conservative and reproductive organs.

Mr. Keith's account of the *Algæ*, which form the fourth chapter, is extremely meagre; while the details on this subject by Mirbel are ample and interesting. Following Lamouroux, the latter author divides the family into two great classes, the *Thalassiophytes* or salt water Algæ, which is subdivided into articulated and unarticulated plants; and the confervæ or fresh water Algæ. *Lichens*, which Mr. Keith regards as a variety of the Algæ, Mirbel classes, properly in our opinion, as a distinct family.

The Fifth and last Chapter of this part treats of the *Fungi*, les Champignons; a family, which notwithstanding the industry and acuteness of Hedwig and Bulliard, is yet very little understood.

(*To be continued.*)

PART III.

SELECTIONS.

Magnetic Cures.—The external use of the magnet, to cure the tooth-ache and other disorders, is a remedy brought into fashion in modern times, but not a new discovery, as supposed by Lessing, who ascribes it to Paracelsus[*]. It was known to Aetius, who lived so early as the year 500. That author says, We are assured, that those who are troubled with the gout in their hands or their feet, or with convulsions, find relief when they hold a magnet in their hand[†]. He does not, however, give any proof of this from his own experience; and perhaps he doubted the truth of it. The above passage contains the oldest account known at present respecting this virtue; for the more ancient writers speak only of the internal use of the magnet.

It is evident, therefore, that this cure has not been discovered in latter times, but that it has been preserved by the old physicians copying it from each other into their works. In the like manner, many things are mentioned in the materia medica which were used or proposed by the ancients, but into the properties of which they never made sufficient inquiry.

Marcellus, who lived in the fifteenth century, assures us that the magnet cures the tooth-ache[‡]. The same virtue is ascribed to it by Leonard Camillus[||], who lived in the sixteenth century: and Wecker[§], who was nearly cotemporary, says that the magnet, when applied to the head, cures the head-ache;

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[*] In his *Kollektaneen*. Berlin 1790. ii. p. 117.

[†] See the Aldine edit. of the works of Aetius. Venetiis 1534, fol. l. ii. c. 25. The passage is thus translated by Cornarius: Tradunt (magnetem) detentum manu chiragrorum ac podagricorum dolores ipsorum sedare. Æque convulsis opitulatur. In some editions, the last words are wanting. Perhaps they are not of Aetius.

[‡] Magnetes lapis (qui antiphyson dicitur) qui ferrum trahit et abjicit, et magnetes lapis qui sanguinem emittit et ferrum ad se trahit, collo alligati aut circa caput, dolori capitis medetur. *De medicamentis*, cap. 1. In *Stephani Artis med. princip.* ii. p. 253.

[||] Magnes gestatus spasmum arthriticum doloremque curat. *De lapidibus*, lib. ii. p. 131.

[§] Ad capitis dolores: magnes ipse capiti admotus dolorem omnesque querelas ejus obliterat. Quod ex veterum commentariis se transtulisse scribit noster Hollerius. *J. J. Wecker de secretis libri xvii.* Basiliæ 1613. 8vo. lib. v. p. 107.

and adds, that Holler had taken this cure from the works of the ancients*. We read also in Porta†, that it was recommended for the head-ache; and in Kircher‡, that it was worn about the neck as a preventive against convulsions, and affections of the nerves. About the end of the seventeenth century, magnetic tooth-picks and ear-pickers were made, and extolled as a secret preventive against pains in the teeth, eyes, and ears||.

Johnston's Translation of Beckmann's History of Inventions and Discoveries.

PART IV.

FOREIGN MEDICAL SCIENCE AND LITERATURE.

PHYSIOLOGY.

I.—The following observations of Prochaska on one fœtus found within another, are extracted from a work published by him on that subject in 1815.

"There are many instances on record, where one fœtus has been found in another, although, possibly, it were but the first germ of a fœtus. A case of this kind, the authenticity of which is beyond all doubt, happened in May 1812, in Austria. An unmarried woman, twenty-five years of age, was delivered of twins, a boy and a girl. Both children appeared healthy

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* I took the trouble to search for this passage in *Jac. Hollerii, lib. de morbis internis,* Parisiis 1711, 4to. but I could not find it, though the beginning of the book treats expressly of head-aches.

† Legimus et capiti admotum magnetem dolores omnes auferre. *J. Bap. Portæ Magiæ naturalis libri xx.* Francofurti 1591. 8vo. lib. vii. p. 382.

‡ Ex collo gestatus magnes spasmum sanare, ac nervorum dolores compescere, manuque detentus partum accelerare, perhibetur. *Athan. Kircheri Magnes, sive de arte magnetica.* Coloniæ Agrip. 1648. 4to. lib. iii. c. i. p. 679.

|| Scalpella magica: Quidam sunt qui dentiscalpia auriscalpiaque habent, quæ tactu solo dolores dentium, aurium et oculorum tollant; ego vero, cum certo acceperim esse tantum magnete tacta, id tibi revelare volui. *Petri Borelli Hist. et observ. medico-physic. Cent iv.* Franc. et Lips. 1676. 8vo. Cent. 4. obs. 75. p. 376.

when first born; but after about a couple of years, a number of morbid symptoms were discovered in the girl, such as great thirst, constant cravings, frequent cryings, restlessness, oppression on the chest, palpitation, and dyspnœa. The abdomen then began to swell, and increased in hardness and size for eight months, when the child died.

DISSECTION.

"The thoracical viscera were found naturally formed, but unnaturally forced upwards in their position; the diaphragm was more than half way up in the cavity of the chest; under and posterior to the stomach was a large bag, weighing about three pounds, and united in several places with the stomach, mysentery and psoas muscles. On the interior surface of the bag were several deformed prolongations, and large and small cavities containing a tenacious, serous, and glairy liquid: and within it, from ten to eleven ounces of a watery liquor, and a monstrous excrescence, which, considering the formation of some parts, had the strongest resemblance to a deformed human fœtus. There were two fore-legs growing together, which plainly exhibited ten toes; a protuberance of intestines was also observed, and long hair on many parts. This report was sent, together with the excrescence, and accompanied by minutes corroborating the facts, to the University of Vienna, by the officiating physician, who had performed the dissection.

"Dr. Prochaska, who published this case, observes, that a human fœtus contained in a perfect child, may arise from an intermixture of the generative matter of their common parents. But in that case he thinks it requisite, that the parents must have produced the germ of both the fœtuses in the same act of coition; the one having as it were penetrated the other, and so become inclosed in it, as we sometimes find a small lemon inclosed in a larger one. The reason of the formation of the interior fœtus lying dormant for some time, and only receiving its full activity after the exterior fœtus is born, he supposes to be the defect of oxygen, which is as necessary to the process of life as the galvanic fluid in the voltaic column. For as the exterior fœtus lives solely by that small proportion of oxygen it receives from the mother's humours, which it almost entirely consumes for its own support, the interior fœtus must of course have the less of it, as it can only receive its share of oxygen and nourishing humours through the medium of the exterior fœtus; its life and evolution seems thus to be at a stand, till the exterior fœtus, being born, begins to oxygenate its blood by immediate respiration; by which means the interior fœtus also receives a greater proportion of that principle of life, and its formation makes the greater progress.

" Dr. Prochaska thinks the other explanation of this phenomenon, viz. the second fœtus being *added afterwards*, and penetrating the first, appears not likely, and absolutely unaccountable; he therefore declares himself in favour of the first position."

PRACTICE OF MEDICINE AND SURGERY.

II. — Prof. *Remer* has published some *Observations on Hydrops Hydatitodes* in Horn's Journal of June 1815, from which the following are extracted.

" The rareness of this remarkable disorder, which has no characteristical symptoms to distinguish it, may be the reason of its not being found in any work on pathology. The primary cause consists in the generation of acephalocystis humana in one or more parts of the body; which, as a usual concomitant of the disorder, is but symptomatical. Experience has not yet taught us a specific remedy against it, nor is it possible to make experiments, as a diagnosis in this disorder is absolutely impossible, from want of pathognomical symptoms, as will be seen from the following case:

" A labourer, thirty years of age, of a phlegmatic habit, after lifting a heavy load, complained of pain in the chest, accompanied with cough, and much debility. Two months afterwards his legs began to swell, he spat blood twice, a little at a time, which degenerated into a purulent expectoration of a bitter taste. He now applied for medical assistance, under the idea of his disorder being the first stage of a pulmonary consumption. His pectoral sufferings abated, but the œdema increased, and the parts became erysipelatous, but soon changed their colour again on the application of dry aromatic fomentations: and the œdema likewise subsiding on using twice antihydropic medicines, the patient thought himself cured. A short time after, however, when he had been at hard labour, the spitting of blood returned, and he complained of stitching pains in the chest; the scrotum was swelled, the pulse very slow, and digestion disturbed. These symptoms were also attended with head-ache. The pectoral sufferings were again soon removed, but the dropsical swelling remained, and a painful hard circumscribed tumour, beginning in the left hypochondrium and extending upwards to the xiphoid cartilage, now made its appearance, which, with the obstinacy of the dropsical swelling, induced Dr. R. to make use of drastic medicines.

" An abscess now formed over the right knee, which effused a considerable deal of ichor; but the dropsy increased, and the patient at last died suddenly, after a long ambiguous state of health.

DISSECTION.

"The greatest mark of disease was found in the spleen, which was unusually extended, and weighed about nine pounds, and a tendinous place was found in its centre, about the size of a hand, from which, on being cut open, a great quantity of water escaped, with a number of globular vesicles, varying in size from that of a millet grain to that of a duck-egg, containing partly a clear liquid and partly a friable substance, which, by the help of a magnifying glass, exhibited other small vesicles. Many of them were burst asunder and dried away. The bag containing these bladders, divided the disorganized spleen into two halves, formed by an aponeurotic membrane from half a line to two lines thickness, interwoven with the substance of the viscus, and furnished with very swollen blood-vessels. It ran obliquely through the spleen, so that its larger half lay to the left and upwards, and the smaller right and downwards. All the other viscera were healthy, except that some water was contained in cavities formed by serous membranes.

"This case is particularly worthy of notice, on account of the spleen being an organ, in which hydatides have as yet but seldom been observed.

"On analysing the fluid contained in the vesicles, it was found to resemble serum; and the membrane or parts produced a considerable quantity of prussiate of ammonia."

III.—Horn's Archives of Medical Experience for July and August, 1815, contains the following remarkable case of aneurism of the heart and aorta:

"In the month of March 1812, Mrs. B., sixty-four years of age, carrying an apron full of wood, fell over board from a vessel. In slipping she dislocated the joint of her right knee, and fell with the left side of her breast on the upper part of a post under water. She was carried home in a state of insensibility; and the dislocation of her leg confined her to her bed for eight weeks; after which she only could walk limping. No visible injury from the fall appeared on her breast; and during the first six months no symptoms indicated any injury done to the internal organs. In the 7th month, however, after the fall, slight obstructions in breathing, anxiety, pains on the left side of her breast, and under the sternum, came on, together with occasional palpitations of the heart, on violent exercise, or mounting stairs, and sometimes, during the night, when lying on her back in an horizontal posture. These complaints, however, were intermittent for several weeks; and during the intervals, the patient found herself pretty well, and slept quietly in any posture. But in the last year, all her complaints, having increased in violence, became continual. The patient now a violent throbbing under the sternum, and observed, for the first time, a little soft pulsating tumour, about the size of a cherry, appear between the first and second rib on the right side, close to the sternum. This tumour did not for some time sensibly increase; and the patient in this condition performed her usual domestic business, though with increasing difficulty. A chronic vomiting, occurring every time after having taken any sustenance, either solid or fluid, which defied every remedy, was joined to her other sufferings, and brought her in a short time so very low, that she could not quit her bed. Her pulse was small, unequally intermittent, and 70 per minute. One morning the pulsating tumour suddenly increased in size, and gave the patient a sensation as if air had been blown into it through a tube. A sugillation under the skin, on the right side of the thorax, also took place, which extended to the hips, but which after a few days was almost entirely re-absorbed again.

"The patient now became jaundiced, and about the 22d of November the tumour had attained the size of the head of a little child, and stretched, beginning flatly from the clavicle on the right side to the nipple on the same side; its greatest height being about the middle. No pulsation was to be felt in any part of it; and, according to the patient, had discontinued very soon after its increase. On being pressed a little hard, it was somewhat painful. The outer teguments were forcibly distended, and a soft mass might be felt underneath. The difficulty of breathing increased daily, in proportion as the strength of the patient declined. She was no longer able to lie on her back; and whilst sitting in her bed, with her head and breast greatly bent forward, on the 25th of November, she expired without a groan.

DISSECTION.

"On the 27th of November the body was opened. The outward teguments were severed from the tumour in its whole extent. The fat lying underneath, as also the glandula thymus, were in the descending parts tinged with extravasated blood. These parts being removed, the musculus pectoralis major appeared like a bag, very thin, of a blackish red colour, containing extravasated, coagulated, blood, its fibres lying stretched in single filaments. On being separated from the clavicle and sternum, a great quantity of coagulated blood issued from it; and a thick layer of the same covered the ribs and intercostal muscles. Between the second and third rib, close to the sternum, the intercostal muscles were pierced, a part of the sternum destroyed by caries, and this opening, about two inches in length, stopped up by a lump of a firm polypous mass of coagulated blood. The connection between the third rib and the sternum was destroyed by caries. The ribs on the right side were sawed through; those on the left separated from the sternum and their cartilages; and thus the thorax laid open. The pulmonic viscera were in their natural position, the lungs of the natural colour, size, and mass, in some places consolidated with the pleura. Both cavities of the thorax contained above a quart of a clear fluid, the left more than the right. The pericardium, with regard to colour and mass, was unaltered; but unnaturally enlarged, thickly covered with fat, and distended by a clear fluid.

" The heart was enlarged, its substance condensed, and uncommonly soft; the outer surface much covered with fat, and a yellowish flaky matter precipitated from the fluid contained in the pericardium. The ventricles and auricles, and the other parts of the heart, did not shew any thing unnatural.

" The aorta on the bend, at the right outward side, was distended into a bag, which was consolidated with the inner surface of the sternum and the second and third rib, that opened outward between both these ribs. The capacity of this bag was more than double the size of the opening between the ribs and sternum. The whole cavity of it was filled with coagulated blood, the sides covered with a yellowish polypous mass, and the artery much contracted. That part of the aorta which descends into the thorax contained ossified places, covered with long scales and yellow-coloured spots, tending toward ossification. The intestines did not show any thing peculiar in any respect."

CHEMISTRY.

IV.—Every thing which can advance our knowledge of Animal Chemistry is of importance. The following short notice of *M. Laugier, upon the matter enclosed in a cyst found attached to the edge of the liver**, is not devoid of interest.

" M. Cocteau, Student in Medicine, extremely zealous for the progress of his art, transmitted to me, two or three months since, among other concretions procured in various dissections, a portion of a cyst, which was found adhering to the edge of the liver in the dissection of a woman between sixty and seventy years of age. The coat of this cyst was thick, and of a fawn colour; it enclosed a poultaceous matter, in which several solid hard concreted particles were disseminated. A portion of the soft substance had begun to putrify, as was evinced by its extremely fœtid odour. Having cut the cyst and its contents into pieces small enough to be introduced into a four-ounce phial, I poured over them alcohol at 36°, in sufficient quantity to cover them, and digested the whole in a sand-bath. The fœtid odour being dissipated at the end of some hours, I poured off the alcohol whilst very hot, and immediately filtered it, in order to obtain it very clear. But, upon cooling, the spirit thickened, and deposited a small quantity of lamellated crystals, which appeared similar to the adipocire of biliary calculi.

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* *Annals de Chimie et de Physique*, tom. ii. p. 126.

A second portion of alcohol, after digesting, thickened slightly upon cooling, and deposited some more plates: but a third portion of the same liquid, heated with the substance of the cyst, presented, upon cooling, only a slight stain, and deposited nothing.

" These plates, when put together, produced so small a quantity of this substance, that I could not ascertain whether it was adipocire, or if it differed from it in any of its characters. After the three digestions, the substance of the cyst was become dry, and the solid granulated particles mentioned above, could easily be separated from the coat. These particles, triturated with the hydrate of the oxide of potassium, disengaged but very little ammonia; did not colour it, and was sensibly dissolved in it.

" A hundred parts of this solid substance having been powdered, and heated in a crucible of platina, were blackened at first, and exhaled the odour of burnt horn during the calcination; but afterwards they regained their white colour.

" I expected to find the residue of the calcination considerably diminished; but was much surprised to observe that the substance had lost very little more than a fifth of its weight; the 100 parts being only reduced to 78. Thus the substance subjected to experiment did not contain, in 100 parts, more than 22 of substances combustible, or decomposible by fire.

" Presuming that this residue, which was entirely soluble, and without effervescence, in the nitric and hydrochloric acids, and rather insoluble in sulphuric acid, was in great part phosphate of lime, I convinced myself by the following experiment.

" I treated the 78 parts remaining from the calcination with weak sulphuric acid, which only dissolved a part of it. Sulphate of lime was deposited, which I received upon a filter. The liquid portion being mixed with ammonia, formed in it a gelatinous precipitate, which on being treated again with sulphuric acid, produced a second portion of sulphate of lime. I obtained also by a third and a fourth treatment, new portions of sulphate of lime. A last precipitate, which was procured by ammonia, and which was not equivalent to more than six parts, was completely soluble in sulphuric acid, a sufficient proof that it contained no more lime.

" The liquors being united, which contained the mixture of the sulphate and phosphate of ammonia, were evaporated to dryness, and the residue calcined long enough to be decomposed. As I had previously weighed the crucible, it was easy to determine the weight of the nitreous matter adhering to its sides.

" It weighed between 27 and 28 parts, which represents a little more than a third of the phosphate of lime subjected to experiment; whilst the rigorous analysis of this salt adopted by chemists, gives only a third of phosphoric acid. But if we consider that a long calcination is necessary to separate the whole of the ammonia from the phosphate of that base, and that it is even doubtful whether we can separate all the ammonia from the phosphoric acid by calcination; also that it is very likely there was some magnesia combined with the sulphuric acid; we can judge that the result of this experiment corresponds exactly enough to the analysis of the phosphate of lime.

" It is then determined, that the solid matter contained in the cyst, was almost entirely formed of phosphate of lime. This fact may not be uninteresting to physiologists, considering that the cysts hitherto chemically examined, were entirely filled with a fat or sebaceous matter, and that their parietes alone have denoted the presence of phosphate of lime. The nature of the fatty substance therein found, has procured them the name of *steatomes*.

" It is not therefore a steatome of which we now have been treating; the cyst, subjected to experiment, essentially differed from a steatomatous cyst, in not containing the sebaceous matter, or only a very small quantity of it, and in being almost entirely filled with phosphate of lime. This difference has appeared to me worthy of remarking, and for this purpose I have commented upon it in this note.

" To what cause are we to ascribe the formation of this great quantity of phosphate of lime in a place so near the liver? From what fluids can it have been deposited? These are questions which the physiologist must determine; all that can be expected from chemistry, is the ascertaining the nature of the substances which are the objects of its inquiries."

V.—*Some Experiments on Garlick*, by M. Bouillon La Grange[*].

" We are indebted to Newman, and also to M. Cadet de Gassicourt, for an analysis of garlick. It is not, therefore, my intention to give a new one; but only to add some facts to those already known. I have latterly had occasion to make use of the juice of garlick; the effect it produced upon a patient has induced me to attempt ascertaining the cause. I will pass over the medical observations which occurred to me upon this subject, in order to present simply the chemical facts.

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[*] *Journal de Pharmacie*, No. viii. p. 357.

" A. If garlick be bruised in a mortar, so viscid a mass is obtained, that it is necessary to add a little water, in order to facilitate the passage of the juice through a sieve.

" B. This juice reddens in a high degree the tincture of turnsol.

" C. It deposits, at the end of some hours, a small quantity of a grey powder, which, after being washed and dried, presented the following properties:

" It is insoluble in cold water, and forms a paste with boiling water.

" This matter becomes blue with iodine.

" These characters must rank it among the fecules.

" D. The tincture of gall-nuts, and the acetate of lead, form copious precipitates in this juice.

" E. If it be boiled, a white flaky matter is formed, in which all the properties of vegetable albumen may be recognized. It may be completely dissolved in nitric acid, with the assistance of heat, without forming any fatty matter.

" Potass evinces the presence of ammonia. This albuminous matter is in general very little.

" F. The evaporation of the filtered juice to the consistence of honey gives a viscid substance of a pale yellow colour.

" This juice thickened is transparent and of rather a sweet taste.

" G. Diluted with water and mixed with yeast, it induces fermentation, and rather a large quantity of alcohol may be obtained. This alcohol preserves a disagreeable odour, undoubtedly owing to the volatile oil which it holds in solution.

" H. In distilling garlick with water, it gives a very milky liquid and a volatile oil, of which the odour is so penetrating that it is impossible to smell it for any time without inconvenience, as it draws tears almost immediately.

" If the distillation is made in an alembic surmounted with a tin head, sulphuretted hydrogen is disengaged, the presence of which is proved by the black colour assumed by white paper suspended in the alembic, previously soaked in acetate of lead. This gas acts upon tin in the same manner.

" I. When we treat garlick with alcohol, the liquid acquires a reddish yellow colour, and its taste is extremely penetrating. This alcohol does not contain any resin in solution, as water does not produce any precipitate. It appears that the quantity of volatile oil dissolved by the alcohol, is never in sufficient quantity for water to render the solution milky; or, we must suppose that this oil is very soluble in water, which appears probable, if we consider the small quantity of oil remaining undissolved in garlick previously distilled with water. The odour of the distilled water is also very penetrating.

" There is no doubt, as M. Cadet de Gassicourt has judiciously remarked, that it is to this oil that garlick owes its most remarkable properties.

" These facts, therefore, induce us to conclude that garlick contains:

" 1. A very acrid volatile oil.—2. Sulphur. — 3. A small quantity of amylaceous fecule.—4. Vegetale Albumine.—5. A sugary matter. All these substances, when isolated, always contain a little oil. It is for this reason that they always smell more or less of garlick."

VI.—After the chemical constitution of the atmosphere had been accurately determined, chemists were struck with the singularity of the fact, that the components were invariably in the same proportions in every part of the globe, at all heights, and in all seasons, making allowance for the aqueous vapour and other occasional local circumstances. This state of the atmosphere, however, may be regarded as being demonstrated within certain limits only, which are bounded by the degree of precision with which observations of this nature can be made; and, impressed with this truth, *M. Theodore de Saussure* lately published* the following results of some experiments which he had instituted, to ascertain whether the proportion of the elements of the atmosphere are really the same in winter as in summer.

" The quantity of oxygen gas in the air," says M. de Saussure, " did not appear to me to be capable of being so accurately determined as to resolve the question; but that carbonic acid gas, as it may be ascertained by weight, is susceptible of much greater precision. The process I followed, was to place barytic water, contained in a wide-mouth flask, in a glass balloon which contained about fourteen litres of air, and which was shut by a brass screw cap, furnished with a stop-cock. The weight of the carbonate of barytes which was formed indicated the proportion of carbonic acid, admitting that 100 parts of this carbonate contain 22 of acid. The balloon, the luting of which had been prepared a year before, in order to prevent the production of any carbonic acid from it during the experiment, was conveyed empty, in the middle of the day, into a large, dry, airy meadow, a league from Geneva, situated on the border of the Lake. It was opened at four feet above the surface of the ground, and the flask of barytic water immediately placed in it. At the end of two months, during which the balloon had been frequently agitated, the barytic water was separated from the carbonate formed in it; and after having washed and dried the salt in the flask which contained it, the weight was carefully ascertained.

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* *Annales de Chimie et de Physique,* tom. ii. p. 199; extracted from the *Bibliotheque Universelle,* I. 124.

" In winter, 10000 volumes of air gave,

Parts of Carbonic Acid Gas.

On the 31st of Jan. 1809, at a temperature of — 5°... 4·57
—— 2 —— 1811, ———— — 6°... 5 4·66
—— 7 —— 1812, ———— + 1°... 2·5·14

Or taking the mean of these observations, 10000 volumes of atmospherical air contain 4·79 of carbonic acid gas; and 10000 parts by weight of the same air contain 7·28 of carbonic acid.

" In summer, 10000 volumes of air gave,

Parts of Carbonic Acid Gas.

On the 20th of Aug. 1810, at a temperature of — 22°... 7·79
—— 27th of July 1811, ———— — 22°... 6·47
—— 15 —— 1815, ———— — 29°... 7·15

Or taking the mean of these observations, 10000 volumes of atmospherical air contain 13 of carbonic acid gas; and 10000 parts by weight of the same air contain 10·83 of carbonic acid.

" These results demonstrate that the quantity of carbonic acid contained in the atmosphere is much greater in summer than in winter. As that quantity cannot change without influencing the proportions either of both or of one of the other components of air, oxygen and azote, I thence infer that the proportion of oxygen gas is greater, or that the atmosphere is purer in winter than in summer.

" The ultimate consequence which appears to result from my experiments, is, that the hurtful effect of fermentation, and other analogous agents, upon the air, is not altogether compensated by the beneficial influence of vegetation. This is not, as is generally believed, the sole source of oxygen gas; for if it were, it would be difficult to conceive how the air could be less pure in summer, which is the period when its greatest influence is exerted*."

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* In a note upon this paper, by Gay Lussac, several reasons are suggested for believing that the results stated by M. de Saussure are exaggerated, and ought not to be admitted without a further examination. We suspend our opinion; but we do not hesitate to assert, that, even allowing the accuracy of the experiments, they admit of a different explanation.—T.

PART V.

MEDICAL AND PHYSICAL INTELLIGENCE.

I.—SOCIETIES.

APOTHECARIES HALL, *July* 31, 1816.

A REPORT *from the* COURT *of* EXAMINERS *to the* COURT *of* ASSISTANTS *of the* SOCIETY *of* APOTHECARIES.

THE first Court of Examiners, chosen under the authority of the "*Act for better regulating the Practice of Apothecaries throughout England and Wales,*" having completed the year for which they were appointed to serve, have drawn up the following statement of the number and qualification of the Candidates who have applied to them to be examined. This Report, originally presented to the Master, Wardens, and Assistants of the Society, is now printed for the Profession in general.

From the 1st of August, 1815, to the 31st of January, 1816, thirty-three persons applied for certificates to practise as Apothecaries; thirty-one of whom were considered qualified for examination, and two were not admitted, being unable to produce the required proofs of attendance on Lectures, and the practice of an Hospital.

Of the thirty-one Candidates examined, six received certificates, authorising them to practise in London and its vicinity, and twenty for other parts of the kingdom; five were rejected. Twenty produced their indentures of appreticeship, and eleven brought sufficient evidence of the same from the parties with whom they had been apprentices. These Candidates had attended the following Hospitals: —Thirteen at St. Thomas's and Guy's Hospitals; five at St. Bartholomew's; six at St. George's; three at the Westminster; one at the London; one at the St. Mary-le-bone Infirmary; one at the Newcastle Infirmary. Six had also been Students in the Medical School of the University of Edinburgh, and the same number had been surgeons in the Army and Navy.

From the 1st of February to the 31st of July, 1816, one hundred and sixty-two persons applied for certificates to practise as Apothecaries; of whom one hundred and fifty-four were considered qualified for examination; six were not admitted, being unable to produce the required testimonials, and two did not attend.

Of the hundred and fifty-four Candidates examined, six received certificates, authorising them to practise in London and its vicinity, and a hundred and forty-one for other parts of the kingdom; seven were rejected. One hundred and sixteen produced their indentures of apprenticeship, and thirty-eight brought sufficient evidence thereof from the parties with whom they had been apprentices. The

Candidates had attended the following Hospitals:—forty-seven at St. Thomas's and Guy's Hospitals; twenty at St. Bartholomew's; sixteen at St. George's; seven at the Middlesex; six at the London; four at the Westminster; three at the St. Mary-le-bone Infirmary; fifteen at the Hospitals and Infirmaries of the Provinces, and of the great Towns of England; one at St. Peter's Hospital in Dublin. Two had been Students in the Medical School of the University of Edinburgh, and six had been Surgeons in the Army and Navy.

During the first six months, the number rejected by the Court was large in proportion to the number examined, being about one in six; but during the last six months, the proportion was very much reduced, being about one only in twenty-two. This circumstance the Court of Examiners had much pleasure in reporting to the Court of Assistants, as they felt a conviction that the Act had already been productive of an increase of industry and application among the Students of Medicine, and as it raised in them a confident expectation that it would eventually be the means of establishing a class of well-educated Practitioners in every part of the kingdom over which its operation extends, whereby the honour and respectability of the Profession would be greatly increased, and the public welfare be most essentially promoted.

Medical Benevolent Society.—We would earnestly urge the attention of the Profession to this laudable Institution, which has now been some months in activity. The object of the Society is to establish two distinct funds, a *Benevolent* and *Annuitant* Fund; and subscriptions to either or both will secure to the Members respective benefits. To the less affluent, who may appropriate a trifle from their annual incomes, in subscribing to the Annuitant Fund, it secures an annuity of at least fifty pounds, when they shall have attained the age of sixty: no mean addition to their comforts, should age and infirmity overtake them. And to those who are placed above any chance of requiring such aid, the Benevolent Fund affords the opportunity of contributing to the relief of their less fortunate brethren. In proof of the respectable auspices under which the Society has been formed, it is sufficient to state that the President is *John Latham*, M.D. President of the College of Physicians; and the Vice-President, *Henry Cline*, Esq., Master of the Royal College of Surgeons.

II.—MEDICAL.

Remedy for Gout.—Dr. Lucas, a Physician of Wettin, has recommended a new remedy for gout; and details a number of cases in corroboration of its efficacy. This remedy consists of pills made of *oleum laterum, cum lateribus distillatum, seu philosophorum,* and some other substances, which Dr. Lucas has hitherto preserved secret. The pills weigh 2 grains, are 10 in number, and are to be taken three times a day, viz. in the morning and at night; when as much as the size of a filbert of the same substance is rubbed into every painful part, particularly in the joints, till it is absorbed, and the place remains quite dry. The effect of this remedy first shews itself by an itching, and sometimes even by a corroding sensation in the skin of the affected parts, to which soon an alleviation and a decrease of the complaint succeeds. A sweating, or an eruption of the skin, and sometimes both, attend the use of the remedy.

Hydrocephalus.—In the *Repository*, vol. iv. p. 369, a case of hydrocephalus internus in a sheep is published by Mr. Watson; by which it is evident that the *disease* was removed by the operation he performed, and it is most probable the sheep would have recovered, had proper attention been paid to it. Our correspondent, Mr. Rose, informs us, that a surgeon in the neighbourhood of Botesdale performed with complete success a similar operation upon three sheep labouring under this disease, about four years since. He does not know the particulars of the cases, nor the method of operating; but he can affirm, that all the sheep had hydrocephalus, and all recovered after the operations.

III.—MATERIA MEDICA.

Liquor Opii Sedativus.—We have lately had an opportunity of witnessing the beneficial influence of this preparation of opium in coughs, even while inflammatory symptoms still existed, and no other preparation of opium could be exhibited.

IV.—CHEMICAL.

Test of Arsenic.—A Correspondent, who signs himself Medicus, after stating, " that the nitrate of silver does not precipitate a solution of *arsenious* acid unless it be well concentrated; although arsenic in that state is precipitated by sulphuretted hydrogen; but that the nitrate is a good test of the presence of *arsenic* acid, which is not precipitated by sulphuretted hydrogen;" requests us to give him our opinion and trials of these tests. — In answer, we have to inform him, that our own experience, and that of other chemists, is in direct opposition to his statement; in proof of which, for his satisfaction, we made the following experiment: — Four grains of arsenic, purchased at a respectable Druggist's shop, were rubbed in a porcelain mortar with twelve fluid drachms of distilled water; but as the whole did not dissolve, the solution was passed through a filter of colourless bibulous paper. On drying the filter thoroughly, it had gained exactly three grains; so that one grain only of the arsenic was held in solution. Ten drops of this solution were now added to twelve fluid drachms of distilled water with two drops of liquor ammoniæ; and, on touching the surface of the fluid with a stick of nitrate of silver, yellow streaks of arsenite of silver were instantly precipitated. In this case the test rendered the *arsenious* acid evident, although its quantity in the twelve drachms of water did not amount to one-sixty-fourth of a grain.

Fuming Sulphurous Acid.—M. Doebereiner, in making some experiments upon this acid, the peculiar properties of which depend on its being perfectly free from water, has found that it is capable of dissolving sulphur, and forming with it, as it were, a sulphate of sulphur, which assumes the appearance of a blue fluid. It decomposes nitric acid, converting it into nitrogen gas and nitrous acid, and forms with the nitrous acid a new chemical compound.

Sulphuric Acid.—Dr. Thomson[*] states, that he has found the specific gravity of this acid free from water, at the temperature of 60°, to be 1·8777. Now sulphuric acid of the specific gravity 1·85 contains 19 per cent. of water. Supposing no condensation to take place, its specific gravity would be 1·7109. On these data he has calculated the following table:

Acid.	Water.	Spec. Grav.	Spec. Grav. supposing no condensation.	Condensation.
1 atom	+ 0 atom	1·8777	......	......
1	+ 1 ——	1·850	1·71	0·140
1	+ 2 ——	1·780	1·596	0·184
1	+ 3 ——	1·650	1·514	0·136
1	+ 10 ——	1·300	1·263	0·037
1	+ 17 ——	1·200	1·175	0·025

V.—NOTICES OF LECTURES.

Dr. CLUTTERBUCK will begin his Autumnal Course of Lectures on the Theory and Practice of Physic, Materia Medica, and Chemistry, on Wednesday the second of October at ten o'clock in the morning, at his house No. 1, in the Crescent, New Bridge Street.—Pupils admitted as usual to attend the Medical Practice of the General Dispensary, Aldersgate Street; where Clinical Lectures will be given weekly, by the Physicians in rotation.

Obstetrical Theatre, 68, *Berners Street.*—DR. CLOUGH, Physician Accoucheur to the St. Mary-le-bone General Dispensary, &c.—commences his Autumnal Course of Lectures on Midwifery, &c., on Monday Morning the 7th of October, at half-past ten, and his Evening Course at Seven.

Dr. DAVIS will commence his Winter Course of Lectures on the Theory and Practice of Midwifery, and on the Diseases of Women and Children, on Thursday the third of October, at six o'clock in the Evening; at Mr. Taunton's Theatre, 87, Hatton Garden.

Mr. GUTHRIE, Deputy Inspector of Hospitals, will commence a Course of Lectures on the Principles and Practice of Medical and Operative Surgery, on the first Wednesday in October, at nine o'clock in the morning, at his house, No. 2, Berkeley Street, Berkeley Square.—To be continued Mondays, Wednesdays, and Fridays.—The Operations referred to will be shewn at the York Hospital, Chelsea.—Medical Officers of the Navy and Army will have free admission to these Lectures, on obtaining a recommendation from the Heads of their respective Departments.

VI.—MISCELLANEOUS.

Surgeons Bill.—WE are informed, that "the projected Bill of the London College of Surgeons has excited very considerable commotions amongst the Surgeons in Dublin. The Members of the Irish College are alarmed for the safety of that monopoly of practice and preferment which they have for many years maintained, under the sanction of the exclusive law, *that none but Members of their own College should be eligible to any public appointment throughout Ireland.* Meetings have been commenced, and Committees appointed, for the purpose of making effectual opposition to a measure that is so completely obnoxious to them: and the insufficiency of the examinations at the London College of Surgeons, is to be the main argument against its Members being admitted to any situation of honour or emolument on the other side the water."

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[*] *Annals of Philosophy,* vol. viii. p. 235.

A List of CERTIFICATED APOTHECARIES.

(Continued from Vol. V. p. 531.)

Joseph Bainbrigge, *Derby*
George Ridley, *Kimbolton*
John Nott Harding, *Barnstaple*
John Little Taunton, *Bradford*
J. S. Norman, *Colchester*
George Waldron, *Worcester*
John Whitehart Stevens, *Pewsey*
Lennard Foaker, *Chelmsford*
William Ledger, *Hertford*
Charles Butler, *Rumford*
John Jackson, *Skipton in Craven*
John Winder, *Lancaster*
John Lancaster, *Blackburn*
Peter Williams, *Holywell*
John Birkett, *Wakefield*
William Luxton, *Witheridge*
John Edward Watton, *Trowbridge*
J. R. Wallace, *Carshalton*
John Ellis Mace, *Tenterden*
John Thomas Dennett, *London*
Thomas Waterhouse
Wright Laxton, *Peterborough*
John Marriott, *Clawson*
Philip Williams, *Rugby*
Henry Giles Lyford, *Winchester*
Thomas Taylor, *Wardrey*
Charles Garneys, *Sudbury*
R. F. Fell, *Nottingham*
Peter Foote, *Belericay*
Thos. Glover, *Market-Bosworth*
J. Warburton, *Pateley Bridge*
W. J. Wickham, *Winchester*
John Wills, *Sturminster-Newton*
Jacob Vale Asbury, *Stow*
John Boatflower, *Manchester*
W. B. Bromehead, *London*
Thomas Turner, *Truro*
J. E. Partington, *Manchester*
Joseph Powell, *Tarvin*
John Wigg, *Marsham*
John Roberts, *Malmsbury*
J. J. Cribb, *Bishop-Stortford*
Oliver St. John Cooper, *Kimbolton*
Henry Parsons, *Sutton St. Mary*
William Lyon, *London*
Thomas Archer, *Saffron-Waldron*
David Haynes, *West-Bromwick*
Charles Allen, *Tutbury*
John Keats, *Wilston Edmonton*
Joseph Wickenden, *Lymington*
H. Williams, *Lledwigan, Anglesea*
William Haigh Bailes, *Doncaster*
Arthur Macfarlane, *Lingfield*
Alex. Brown, *Eden-Bridge, Kent*
William Grist
John Edward Fosbrooke, *Rugby*
Stephen White, *London*
Charles Inman, *London*
Benjamin Smith, *Gainsborough*
Robert Ford, *Highworth*
Henry Clark, *London*
John Miles, *London*
Richard Miles Galindo, *London*
Tobias Browne, *London*
Benjamin Jolit Touray
Thomas Hodgskinson Critchley
John Hill
William Nettleton Balme
William Booth Thornton
William Norris
Francis Earle, *Bedale*

The Annual List, according to the Act, is published by the Society.

A METEOROLOGICAL TABLE,

From the 21st of August to the 20th of September, 1816,

KEPT AT RICHMOND, YORKSHIRE.

230 Miles NW from London.

D.	Barometer.		Therm.		Rain Gage.	Winds.	Weather.
	Max.	Min.	Max	Min.			
21	29 82	29 78	70	52		SE.W.	1 Sun.... 2 Cy...
22	29 78	29 78	66	52	02	NE.	1 3 4 Cy.. 2 Rain.
23	29 77	29 77	69	54	27	NE.	1 3 4 Cy.. 2 Rain..
24	29 83	29 82	67	46		NE.	1 Cy 2 Sun..
25	29 85	29 83	70	54		NE.	1 Sun. 3 Cy...
26	29 82	29 80	71	52		NE.N.	1 3 4 Cy... 2 Sun..
27	29 83	29 82	66	48		NE.	1 Cy.. 2 Sun..
28	29 80	29 72	67	46		E.SW.	1 Sun....
29	29 62	29 59	61	46		SW...	1 Sun.. 2 Cy...
30	29 36	29 06	62	46	09	NW.NE.	1 Sun. 3 Rain.
31	29 23	29 21	52	43	15	NE..	1 Sun. 3 Rain..
1	29 33	29 32	56	38	05	NNW...	1 Sun.. 3 Rain. 4 Moon..
2	29 42	29 40	55	32		WNW..	1 Sun...
3	29 27	29 04	58	40	24	SW..SE..	1 Sun... 4 Rain..
4	29 26	29 08	58	42	06	ESE.NNW.	1 3 Rain. 2 Sun.. 4 Cy..
5	29 54	29 53	62	41		NNE..	1 Sun...
6	29 47	29 42	64	46	10	NE.ESE.	1 4 Cy.. 2 Sun. 3 Rain..
7	29 46	29 40	63	46	01	W.NNW.	1 3 Cy.. 2 Sun. 4 Rain.
8	29 34	29 34	62	40	04	W..	1 Sun. 3 Rain. 4 Mn...
9	29 87	29 83	61	51	35	SE.SW....	1 Sun. 2 Rain... 4 Mn...
10	29 34	29 29	68	46		SW....SW..	1 S... & Sh. 4 Mns...
11	29 53	29 43	60	46		WSW..	1 Sun..
12	29 73	29 73	63	39		WNW..	1 3 Sun.. 2 Sh. 4 Starl..
13	29 60	29 50	62	52	02	SE.SW.	1 Sun. 2 Cy.. 3 Rain.
14	29 58	29 55	67	58		SW...S..	1 Sh. 2 Sun. 3 Cy..
15	29 66	29 63	73	54		SW.	1 3 Sun... 2 Cy.. 4 Stl..
16	29 70	29 68	72	53		SW.	1 Sun..
17	29 67	29 65	68	52		NW.NE.	1 Mist... 2 S.. 3 Cy...
18	29 77	29 72	58	38	02	NE.	1 Rain. 2 Cy.. 4 Starl...
19	29 77	29 73	60	38		W.E.	1 Sun...
20	29 63	29 48	60	36		S.	1 Cy.. 2 Sun...

THE quantity of rain during the month of August was 1 inch 33-100ths.

◆

Observations on Diseases at Richmond.

The weather, in the former part of this period, was unpropitious to the harvest; but a violent gale of wind on the 9th and 10th has effected a very favourable change.

The prevailing disorder has been Simple Fever, attended in some instances with swelling of the face and glands about the throat, which has not proved very severe. Two cases of Puerperal Fever have occurred, which readily yielded to active purging and bleeding. Cases of Dyspepsia, Epilepsia, Gastrodynia, Lumbago, Obstipatio, Pneumonia, and Rheumatismus, have been under treatment.

METEOROLOGICAL TABLE FOR LONDON,

From the 19*th of AUGUST, to the* 19*th of SEPTEMBER*, 1816,

By Messrs. HARRIS & Co.

Mathematical Instrument Makers, 50, High Holborn.

M.	D.	Therm.			Barom.		Rain Guage	De Luc's *Dry.*	Hygrom. *Damp.*		Winds.		Atmo. Variation.		
	20	57	60	49	30^{1}	30^{1}			3	2	NW	N	Fine	——	——
◐	21	54	62	55	30^{2}	30^{2}			3	2	N	N	Fine	——	——
	22	61	65	55	30^{1}	30^{1}			5	5	WNW	NE	Clo.	Fine	Clo.
	23	61	65	55	30^{1}	30^{1}			3	6	WNW	NW	Fine	Clo.	Rain
	24	58	67	50	30^{1}	30^{2}			6	5	N	NNE	Clo.	Fine	Clo.
	25	60	65	58	30^{2}	30^{2}			3	3	NE	E	Fine	——	——
	26	60	63	54	30^{1}	30^{2}			5	3	E	NE	Fog	Fine	——
	27	57	63	51	30^{4}	30^{5}			2	2	N	NW	Fine	——	Clo.
	28	55	62	50	30^{3}	30^{1}			2	2	NW	N	Fine	——	——
○	29	50	59	46	29^{9}	29^{9}			3	4	NNW	NE	Fine	——	——
	30	49	57	46	29^{6}	29^{4}			5	7	N	N	Clo.	Rain	Clo.
	31	47	50	44	29^{1}	29^{9}			10	9	NNE	NE	Rain	——	——
	1	45	48	43	29^{5}	29^{5}			10	8	NNW	N	Rain	——	——
	2	45	52	41	29^{6}	29^{8}			4	3	NW	N	Fine	——	——
	3	46	52	45	29^{8}	29^{6}			3	5	W	SSE	Fine	Rain	Clo.
	4	51	59	46	29^{4}	29^{4}			6	5	SW	W	Fine	Rain	Fine
	5	52	57	49	29^{6}	29^{8}			4	5	Wva	NNW	Fine	——	——
◑	6	53	62	48	29^{9}	29^{9}			5	7	N	S	Clo.	——	——
	7	52	60	55	29^{9}	29^{8}			9	9	SW	SW	Fine	——	——
	8	59	61	55	29^{8}	29^{8}			9	8	SW	SSW	Fine	——	——
	9	55	59	56	29^{7}	29^{5}			8	10	SW	Wva	Rain	——	Clo.
	10	59	64	55	29^{5}	29^{8}			6	7	SW	SW	Fine	——	——
	11	57	62	54	29^{9}	30			11	14	SSW	S	Rain	——	Clo.
	12	58	61	56	30	30^{3}			10	10	WSW	SW	Rain	——	——
	13	59	63	59	30^{3}	30^{5}			11	9	S	S	Fine	Rain	Fine
	14	59	65	59	30^{5}	30^{6}			8	6	SW	SSE	Fine	——	——
●	15	59	69	67	30^{3}	30^{5}			4	5	SW	S	Fine	——	——
	16	61	70	72	30^{1}	30			3	3	E	ENE	Fine	——	——
	17	56	67	54	30	30^{1}			3	5	NE	NNE	Fog	Fine	——
	18	55	64	53	30^{1}	30^{1}			4	3	E.	E	Fine	——	——
	19	54	63	54	30^{1}	30^{1}			3	3	NE	E	Fine	——	——

The quantity of Rain during the month of August, is 1 inch 51-100ths.

BILL OF MORTALITY *from August* 20 *to September* 17, 1816.

		Aug. 27.	*Sept.* 3.	*Sept.* 10.	*Sept.* 17.	
CHRISTENED.	Males	258	250	240	209	
	Females	253	235	245	180	
		511	485	485	389	Total, 1870.
BURIED	Males	167	167	144	149	
	Females	185	184	153	159	
		352	351	297	308	Total, 1308.
OF WHOM HAVE DIED	Under 2 Years.	83	95	87	95	
	Betw. 2 and 5	31	30	26	25	
	5 and 10	18	12	12	15	
	10 and 20	13	11	13	9	
	20 and 30	26	28	19	29	
	30 and 40	37	35	28	27	
	40 and 50	39	44	31	30	
	50 and 60	38	37	28	27	
	60 and 70	27	25	22	24	
	70 and 80	21	22	16	21	
	80 and 90	15	11	12	13	
	90 and 100	4	1	2	2	
	104			1		
SMALL POX		0!	10	11	13	Total 34.

A REGISTER OF DISEASES

Between AUGUST 20th, and SEPTEMBER 19th, 1816.

DISEASES.	Total.	Fatal.	DISEASES.	Total.	Fatal.
Abortio	17		Febris *intermittent*	17	
Abscessio	16		——— *catarrhalis*	16	
Acne	1		——— *Synocha*	4	
Amenorrhœa	17		——— *Typhus mitior*	28	
Anasarca	22		——— *Typhus gravior*	6	3
Anorexia	3		——— *Synochus*	23	
Aphtha *lactentium*	13		——— *Puerpera*	5	
——— *anginosa*	1		——— *remit. Infant*	15	2
Apoplexia	11	7	Fistula	3	
Ascites	8	1	Furunculus	5	
Asthenia	30		Gastrodynia	38	
Asthma	40		Gonorrhœa	18	
Atrophia	10	1	Hæmatemesis	3	
Bronchitis *acuta*	3		Hæmaturia	1	
——— *chronica*	3		Hæmoptöe	11	
Bronchocele	3		Hæmorrhois	27	
Calculus	2		Hemiplegia	5	
Cancer	4		Hepatalgia	7	
Carbunculus	1		Hepatitis	20	1
Cardialgia	14		Hernia	3	
Carditis	2		——— *humorrhalis*	2	
Catarrhus	62		Herpes *Zoster*	9	
Cephalalgia	24		——— *circinatus*	2	
Cephalæa	1		——— *labialis*	3	
Chlorosis	13		Hydrargyria	1	
Chorea	6		Hydrarthyrus	2	
Cholera	38		Hydrocele	2	
Colica	16		Hydrocephalus	3	2
——— *Pictonum*	11		Hydrothorax	7	3
Contractura	1		Hypochondriasis	8	
Convulsio	13	4	Hysteralgia	1	
Cynanche *Tonsillaris*	42		Hysteria	23	
——— *maligna*	1		Icterus	7	
——— *Parotidea*	10		Impetigo *scabida*	2	
Diabetes	2		Ischias	3	
Diarrhœa	56	1	Ischuria	3	
Dysenteria	19		Lepra	4	
Dyspepsia	57		Leucorrhœa	26	
Dyspnœa	18		Lichen *simplex*	2	
Dystocia	1		Lithiasis	1	
Dysuria	10		Mania	10	1
Ecthyma	2		Melancholia	6	
Eneuris	2		Menorrhagia	26	
Enteritis	3		Morbi *Infantiles**	105	3
Entrodynia	23		——— *Biliosi**	62	
Epilepsia	5		Nephritis	2	
Epistaxis	11		Neuralgia	10	
Erysipelas	31	1	Obstipatio	27	
Erythema *læve*	2		Odontalgia	27	
Erythismus *Merc*	1		Opthalmia	32	

DISEASES.	Total.	Fatal.	DISEASES.	Total.	Fatal.
Otalgia	3		Rheumatismus *acutus*	45	
Palpitatio	2		——— *chronicus*	48	
Paralysis	14	1	Rubeola	47	3
Paronychia	4		Scabies	67	
Peripneumonia	12	1	Scarlatina *simplex*	20	
Peritonitis	3		——— *anginosa*	4	
Pertussis	16		Scirrhus	1	
Phlegmasia *dolens*	4		Scorbutus	5	
Phlogosis	15		Scrofula	18	
Phthisis *Pulmonalis*	39	15	Spasmi	19	
Plethora	3		Splenitis	1	
Pleuritis	9		Strictura	7	
Pleurodyne	7		Strophulus *intertinctus*	3	
Pneumonia	21	3	Syphilis	43	1
Podagra	9		Tabes Mesenterica	5	
Polypus	1		Tic Doloreux	2	
Porrigo *scutulata*	3		Vaccinia	32	
——— *favosa*	6		Varicella	14	
Prolapsus	5		Variola	27	11
Prurigo *mitis*	1		Vermes	33	
——— *senilis*	3		Vertigo	18	
Psoriasis *guttata*	6		Urticaria *febrilis*	12	
——— *inveterata*	1		——— *evanida*	3	
Purpura *simplex*	1				
——— *humorhalis*	1		Total of Cases	2039	—
Pyrosis	2				
Rachitis	1		Total of Deaths		65

* *Morbi Infantiles* is meant to comprise those Disorders principally arising from dentition or indigestion, and which may be too trivial to enter under any distinct heads; *Morbi Biliosi*, such Complaints as are popularly termed *bilious*, but cannot be accurately classed.

Observations on Prevailing Diseases.

Less rain, by nearly two-thirds, has fallen in the last than in the preceding month, and the weather has assumed all the characteristics of autumn; except, happily, the usual proportion of sickness.

This fortunate change which disperses the dread of want, lessens the danger also of its sure concomitant—disease.

Never was the influence of temperature on the human constitution more forcibly illustrated, than in the difference exhibited in the number of the sick and nature of the prevailing diseases at present, and what they were in the corresponding month of the last year:

In Aug. and Sept. 1816, Cholera Morbus..... 38; Diarrhœa..... 56.
——— 1815, ——— 175; ——— 226.

In short, there does not appear to be an increase under any species of disease but *Apoplexia*. Whether the paucity of cases of those alvine dejections, to which persons are generally more or less subject in autumn, may have occasioned too great determination to the head, from the omission of a customary, and, when moderate, often salutary, evacuation, it is impossible, perhaps, to ascertain; but is well worthy of consideration.

The few cases recorded of *Typhus gravior* have been of a severe form; and three out of six have proved fatal.

The same freedom from severe disorders that we have remarked in the population at large applies equally to children, as we see by Mr. Field's Quarterly Report of the Diseases of the Boys in Christ's Hospital.

There is one circumstance highly worthy of notice, for its singularity: the Bill of Mortality from the 20th to the 27th of August does not contain a single death from Small Pox! Is this accident? or is Vaccination really extending its prophylactic blessings over a more enlightened people?

There are still a few cases of *Rubeola* inserted, which are said to be attended with typhoid symptoms; and from which, two of the cases, reported as fatal, died.

Such a healthful period admits of few remarks that can be useful in a practical point of view.

A case of *Ascites abdominalis* was accompanied by diseased liver, and terminated the existence of a woman who had been cured of the same disease four years previously.

One of the cases of *Pneumonia* terminated by effusion into the cavity of the chest, and into the parenchymatous substance of the lungs.

Phthisis trachealis, in one instance, was preceded by *Bronchitis,* which had existed for several months.

A case of *Diarrhœa* run into *Dysentery,* and was accompanied by typhoid fever, which terminated in death.

◆

Examinatio post mortem.—A case of *Hydrothorax* was accompanied by *Anasarca* of the heart and larger vessels, which were found in a very diseased state; and the left cavity of the chest was nearly filled with fluid.

Monthly Prices of SUBSTANCES *employed in* PHARMACY.

		S.	D.
Acaciæ Gummi elect.	lb.	4	0
Acidum Citricum - -	-	32	0
—— Benzoicum -	unc.	6	6
—— Sulphuricum -	P. lb.	0	9
—— Muriaticum - -	-	1	6
—— Nitricum - -	-	4	0
—— Aceticum - -	cong.	4	6
Alcohol - - -	M. lb.	5	0
Æther sulphuricus - -	-	10	6
—— rectificatus - -	-	14	0
Ærugo - - -	lb.	7	6
Aloes spicatæ extractum -	-	7	6
— vulgaris extractum -	-	5	0
Althææ Radix -	-	1	6
Alumen - - - -	-	0	6
Ammoniæ Murias - -	-	2	0
——— Subcarbonas -	-	4	0
Amygdalæ dulces -	-	4	6
Ammoniacum (Gutt.) - -	-	9	0
——— (Lump.) -	-	5	0
Anthemidis Flores - -	-	2	0
Antimonii oxydum - - -	-	7	0
——— sulphuretum -	-	1	0
Antimonium Tartarisatum	-	8	0
Arsenici Oxydum - - -	-	2	0
Assafœtidæ Gummi-resina -	lb.	5	6
Aurantii Cortex - -		3	6
Argenti Nitras - -	unc.	5	6

		S.	D.
Balsamum Peruvianum -	lb.	34	0
—— Tolutanum -	-	20	0
Benzoinum elect. - -	-	12	0
Calamina præparata - -	-	0	6
Calumbæ Radix - - -	-	3	0
Cambogia - -	-	10	0
Camphora - - -	-	8	0
Canellæ Cortex - -	-	5	0
Cardamomi Semina opt. -	lb.	10	6
Cascarillæ Cortex - -	-	4	0
Castoreum - - -	unc.	5	0
Catechu Extractum - -	lb.	3	6
Cetaceum - - -	-	3	3
Cera alba - - -	-	3	9
—— flava - - -	-	3	6
Cinchonæ cordifoliæ Cortex (yellow)		6	0
—— lancifoliæ Cortex (quilled)		9	0
—— oblongifoliæ Cortex (red)		16	0
Cinnamomi Cortex - -	-	17	0
Coccus (Coccinella) -	unc.	3	6
Colocynthidis Pulpa - -	lb.	26	0
Copaiba - - -	-	6	0
Colchici Radix - -	-	3	6
Croci stigmata - - -	unc.	6	6
Cupri sulphas -	lb.	1	2
Cuprum ammoniatum	-	10	6
Cuspariæ Cortex -	-	4	0
Confectio aromatica -	-	9	0

		S.	D.
Confectio Aurantiorum		3	6
—— Opii		6	6
—— Rosæ caninæ		2	0
—— Rosæ gallicæ		2	0
—— Sennæ		2	0
Emplastrum Lyttæ		7	0
—— Hydrargyri		3	0
Extractum Belladonnæ	unc.	2	0
—— Cinchonæ		3	0
—— Cinchonæ resinosum		5	0
—— Colocynthidis		3	6
—— Colocynthidis comp.		2	0
—— Conii		0	9
—— Elaterii		30	0
—— Gentianæ		0	6
—— Glycyrrhizæ	lb.	5	0
—— Hæmatoxyli	nc.	0	9
—— Humuli		0	9
—— Hyoscami	unc.	1	6
—— Jalapæ	2*s.* 6*d.* Res.	4	0
—— Opii		5	6
—— Papaveris		1	7
—— Rhæi		3	0
—— Sarsaparillæ		1	6
—— Taraxaci		0	9
Ferri subcarbonas	lb.	5	0
— sulphas		2	0
Ferrum ammoniatum		6	0
—— tartarizatum		6	0
Galbani Gummi-resina.		10	6
Gentianæ Radix elect		1	6
Guaiaci resina		7	6
Hydrargyrum purificatum		5	6
—— præcipitatum album		9	0
—— cum creta		6	6
Hydrargyri Oxymurias	unc.	0	9
—— Submurias		0	9
—— Nitrico-Oxydum		0	9
—— Oxydum Cinereum		1	6
—— Oxydum rubrum		6	0
—— Sulphuretum nigrum		0	4
—— —— rubrum		0	9
Hellebori nigri Radix	lb.	3	6
Ipecacuanhæ Radix		17	0
—— Pulvis		19	0
Jalapæ Radix		5	0
—— Pulvis		6	0
Kino		10	6
Liquor Plumbi subacetatis	M. lb.	0	6
— Ammoniæ		5	6
— Potassæ		1	6
Linimentum Camphoræ comp.		6	0
—— saponis comp.		4	6
Lichen	lb.	1	4
Lyttæ		12	0
Magnesia		10	6
Magnesiæ Carbonas		3	6
—— Sulphas, opt.		1	0
Manna optima		7	0
— communis		4	6
Moschus pod, (30*s.*)	in gr. unc.	40	0
Mastiche	lb.	7	0
Myristicæ Nuclei		20	0
Myrrha elect.		7	0
Olibanum		4	6
Opoponacis gummi resina		30	0
Opium (Turkey)		34	0
Opium (East India)			
Oleum Æthereum	oz.	2	6
— Amygdalarum	lb.	4	0
— Anisi	unc.	3	0
— Anthemidis		6	6
— Cassiæ		9	0
— Caryophilli		6	6
— Cajuputi		7	6
— Carui		1	6
— Juniperi Ang.		5	0
— Lavandulæ		4	6
— Lini	cong.	5	0
— Menthæ piperitæ	unc.	4	0
— Menthæ viridis Ang.		4	6

		S.	D.
Oleum Pimentæ	unc.	6	0
— Ricini optim.	(per bottle)	12	0
— Rosmarini	unc.	1	0
— Succini 2*s.* 6*d.* ——	rect.	5	0
— Sulphuratum	P. lb.	1	6
— Terebinthinæ		1	0
— — rectificatum		2	0
Olivæ Oleum	cong.	18	0
— Oleum secundum		12	0
Papaveris Capsulæ	(per 100)	5	6
Plumbi subcarbonas	lb.	0	8
— Superacetas		2	6
— Oxydum semi-vitreum		0	9
Potassa Fusa	unc.	1	4
— cum Calce		0	6
Potassæ Nitras	lb.	1	0
— Acetas		9	0
— Carbonas		4	6
— Supercarbonas		1	4
— Sulphas		1	4
— Sulphuretum		2	6
— Supersulphas		0	9
— Tartras		3	6
— Supertartras		1	10
Pilulæ Hydrargyri	unc.	0	9
Pulvis Antimonialis		0	9
— Contrayervæ comp.		0	6
— Tragacanthæ comp.		0	6
Resina Flava	lb.	0	5
Rhæi Radix (Russia)		33	0
—— (East India) opt.		16	0
Rosæ petala		18	0
Sapo (Spanish)		3	0
Sarsaparillæ Radix		8	0
Scammoneæ Gummi-Resina	unc.	3	6
Scillæ Radix siccat, opt.	lb.	4	6
Senegæ Radix		4	6
Sennæ Folia		6	6
Serpentariæ Radix		8	6
Simaroubæ Cortex		6	0
Sodæ subboras		5	6
— Sulphas		0	6
— Carbonas		6	6
— Subcarbonas		2	6
— — exsiccata		5	0
Soda tartarizata		2	6
Spongia usta		26	0
Spiritus Ammoniæ	M. lb.	5	0
— —— aromaticus		5	6
— —— fœtidus		5	0
— —— succinatus		5	6
— Cinnamomi		3	0
— Lavendulæ		5	0
— Myristicæ		3	6
— Pimentæ		3	6
— Rosmarini		4	0
— Ætheris Aromaticus		7	6
— — Nitrici		5	0
— — Sulphurici		7	0
— — Compositus		7	6
— Vini rectificatus	cong.	26	0
Syrupus Papaveris	lb.	2	0
Sulphur		0	9
— Sublimatum		1	0
— Lotum		1	2
— Præcipitatum		2	6
Tamarindi Pulpa opt.		2	0
Terebinthina Vulgaris		0	10
—— Canadensis		8	6
—— Chia		14	0
Tinct. Ferri muriatis		5	6
Tragacantha Gummi, elect.		8	0
Valerianæ Radix		1	8
Veratri Radix		2	6
Unguentum Hydrargyri fortius		5	6
—— —— Nitratis		2	6
—— —— Nitrico-oxydi		3	0
Uvæ Ursi Folia		3	6
Zinci Oxydum		7	0
— Sulphas purif.		3	0
Zingiberis Radix opt.		3	6

Prices of New Phials per Gross.——8 oz. 70*s.*—6 oz. 58*s.*—4 oz. 47*s.*—3 oz. 43*s.*—2 oz. and 1½ oz. 36*s.*—1 oz. 30*s.*—half oz. 24*s.*——The London Glassmen allow 10 per Cent, ready money.——The Manufacturers in the Country, where all Phials are made, allow 27½ discount, at three months credit, (carriage free,) to London.

Prices of second-hand Phials cleaned, and sorted.——8 oz. 46*s.*—6 oz. 44*s.*—4. oz. 33*s.* 3oz. 30*s.*—2 oz. and all below this size, 25*s.*—Three months credit.

LITERARY NOTICE.

New Pharmacopœia of France.—We rejoice to learn that the Faculty of Paris are at length sensible of the reproach which they have so long merited, for the want of a National Pharmacopœia:—a defect which we took occasion in the 4th vol. of the *Repository*, p. 382, to descant upon with some degree of severity.

By an ordinance of the King of France, dated August 8th, 1816, it is ordered, that, a new *Pharmaceutic Formulæ*, edited by *the Professors of the Faculty of Medecine and of the School of Pharmacy*, to be intitled CODEX MEDICAMENTARIUS PHARMACOPŒA GALLICA, shall be printed and published under the direction of the Minister of State for the Interior.

After six months from the date of the publication of the new Codex, and of the number of the Copies prescribed by the law being deposited in the Royal Library, every Apothecary having an open shop (officine), or being attached to any public establishment, must provide himself with the new Codex, and conform to it in the preparation and preservation of medicaments. Such as neglect so to do will be liable to a fine of five hundred francs.

MONTHLY CATALOGUE OF BOOKS.

A Memoir on the Cutting Gorget of Hawkins; by Antonio Scarpa. Translated from the Italian by J. H. Wishart, Member of the Royal College of Surgeons, Edinburgh.

Part I. of Surgical Observations; being a Quarterly Report of Diseases in Surgery. By Charles Bell. 8vo.

Oracular Communications, addressed to Medical Students. By Æsculapius.

A Treatise on Uterine Hæmorrhage, By Duncan Stewart, M.D. Physician Accoucheur to the Westminster General Dispensary and Lecturer on Midwifery in London. 8vo.

Callow's, Highley's, Cox and Son's, Underwood's, and Anderson's Medical Catalogues for 1816—17.

NOTICES TO CORRESPONDENTS.

We thank W. N. *for his very excellent paper, which shall appear in the next Number; and we are personally gratified by his kind expressions. Indeed we shall feel much obliged by the continuation of his correspondence, and lament that his diffidence has so long kept his observations from the profession. As his motive can only be the benefiting of others,* W. N. *should recollect that the authority of a Name adds interest and importance to all Medical Communications.*

To Dr. Male*'s Letter we will take an early opportunity of attending.*

Communications are received from Mr. Newnham, Mr. Leese, Mr. Peacock, *and several others, which shall be duly noticed.*

CORRIGENDA IN THE LAST NUMBER.

Page 180, line 32, *for* I am here *read* I am *not* here
181, — 40, *for* will do *read* will *not* do
184, — 27, *for* precision *read* process
— 32, *for* impediments *read* ingredients

THE
LONDON MEDICAL
REPOSITORY.

No. 35. NOVEMBER 1, 1816. Vol. VI.

PART I.

ORIGINAL COMMUNICATIONS.

I.

Some Observations on Suppression and Diminished Excretion of Urine. By a Member of the Royal College of Physicians in London.

Diminished excretion of urine depends upon so many different and opposite states of the system, and of its parts, that nothing is more to be condemned than the classing and confounding all cases of diminished discharge of urine under the name of Suppression of Urine. It too commonly happens that medical men, if they find that their patients pass but little urine, immediately order diuretics. These may in some cases be useful; but in other cases they must be prejudicial. They may be serviceable where the fault is in the kidney; but in all other cases of diminished excretion they must be improper. For if urine be secreted in proper quantity by the kidney, but its passage be impeded by some obstruction in the urinary canals, it must be wrong to increase the secretion of that fluid, which, in its natural quantity, cannot find an outlet. But it is not proper to administer diuretics in all cases of faulty action of the kidney. If the kidney be affected with what is termed spasm, or with inflammation, diuretics will increase the affection. It has been recommended, that, in cases of calculous formations in the kidney, diuretics should be given, with a view of washing such formations away. But if diuretics be allowable in slight cases of this kind, where *gravel* only is present, they must be improper when a large calculus is embedded in the gland. Where a part of the kidney is destroyed by abscess, or where tubercles or hydatids are present, interfering with the action of a portion of the gland, the exhibition of drastic diuretics will stimulate the remaining sound parts greater action, which, if kept up for a length of time, may be more than those parts can bear. Where there is inactivity of the kidney, diuretics are necessary to rouse it to action: but it should be borne in mind, that when we order strong diuretics, we should also direct our patient to drink copiously; otherwise they may do harm, and produce fever and other bad symptoms. Diminished discharge of urine may be considered under the following heads:

1. Diminished excretion of urine, *the action of the kidneys being diminished, impeded, or suspended.*
2. Diminished excretion of urine per urethram, the action of the kidneys being natural, the diminished discharge arising from its evacuation by some other outlet.
3. Diminished excretion of urine, the action of the kidneys being natural, the diminished excretion arising from obstruction in the ureter.
4. Diminished excretion of urine, the action of the kidneys being natural, the diminished excretion depending on absorption from the bladder.
5. Diminished excretion of urine, the action of the kidneys being natural, the urine being poured into the bladder, and being there retained, *the bladder being distended.*

The first of these is the true Suppression of Urine, the causes of which are numerous. A diminished secretion of urine does not, however, necessarily prove that the kidneys are in fault: they may be perfectly competent to perform their office, and yet not be called upon to act to their full extent. May there not be a deficiency of watery parts in the blood? or may not these watery parts pass off by some other channel, or by the skin? Mirabile enim inter binas has excretiones observatur æquilibrium*. In dropsy, and in other diseases, there is a diminished secretion of urine; but these cases do not come within the intention of this paper. We are now only to consider diseased states of the kidney influencing the secretion of urine. Diminished excretion of urine arising from diminished secretion, or true suppression, is not as common as that which arises from retention; for the secretion of urine being performed by two bodies, separate and at a considerable distance from each other, it follows, that though one of these should have its action diminished, impeded, or suspended, the secretion would still be carried on by the other. Some of the causes of suppression may influence the action of both kidneys, while others affect only that of one. The cause may be accidental, or temporary, or it may exist permanently. It may occasion partial or total suppression.

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* Gregory, *Med. Theor. Conspect.*

The exhibition of drastic diuretics, or of cantharides, (especially if the patient refrain from drinking at the time of their operation,) may diminish, impede, or suspend the action of the kidneys, by producing irritation or inflammatory action. It is possible, however, that these are more generally the causes of the fifth division of diminished excretion of urine by irritating the neck of the bladder.

Gout causes the action of the kidneys to be diminished, impeded, or suspended. It may do this primarily, being retrocedent or misplaced; or, secondarily, by favouring the formation of concretions in the kidney. Sydenham notices the diminished discharge of urine in a fit of the gout, and states that nephritic pains come on at the declination of the general fit. Austin makes the latter remark.

Torpor or paralysis of the kidneys occasions their action to be diminished or suspended. It attacks persons in the decline of life, who have lived intemperately. It may arise from common causes of inflammation, violent exercise, cold from a damp bed, or from lying on the ground, or perhaps, says Dr. Darwin, from drinking too little aqueous fluid. It may be connected with torpor of the system. It may come on suddenly or gradually. Dr. Darwin says, that where it occurs in a wine-drinker, the disease is generally fatal, and that the excretory mouths of the tubuli uriniferi become filled with concreted mucus or calculous matter; and in eight or ten days stupor and death supervene, from retention of the feculent parts of the blood. A paralysis of the kidney may arise from pressure on the spinal marrow. A torpor of the kidneys takes place towards the termination of some fevers, and after the administration of poisons.

Spasm may diminish or suspend the action of the kidneys. It may be excited by cold, calculous matter in the kidney constituting what has been called nephritic colic; or, as Gregory says, from consent with other parts, as the intestines or skin*. In fevers, Battie says, "urina aut parca aut penitus suppresso quam maximo metuenda est, vasa enim renalia per spasmum vicinum constricta esse arguit†."

Inflammation of the kidney may be produced in various ways. Its effect on the secretion of urine will depend upon the degree and seat of the inflammation, and also upon its attacking one or both of the kidneys. It often, however, though not universally, happens, that when one kidney is inflamed, the other, to use Morgagni's expression, "in consensum trahitur." The terminations of inflammatory action in the kidney may affect the secretion; the termination in suppuration may fill the infundibula with pus. An abscess rupturing in the kidney exposes an ulcerated surface to the action of the urine, which, by causing irritation, may interfere with the secretion. The termination in gangrene is fatal. When scirrhus follows inflammatory action, it may, when beginning to form, keep up some of the symptoms of nephritis; but afterwards it may produce no inconvenience for many years.

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* *Conspect. Med. Theoret.* † *Battie Aphorismi.*

Scrofulous abscesses are often found in the kidney: these generally destroy, first, the mamillary portion; and, when they advance further, the whole substance of the gland is destroyed and converted into capsules*.

Calculous matter in the kidneys interferes with the secretion of urine. A small crystal may pass down the ureter without producing any inconvenience. The effect of calculous matter upon the secretion depends upon the situation which it occupies. A calculus in the pelvis of the kidney, gradually enlarging, will at first impede the passage of the urine into the ureter, and may at last prevent it entirely. The urine in this case is accumulated above the stone, enlarging the pelvis as well as the kidney itself. After a time the kidney loses a great part of its substance, and is converted into a capsule. In this state of the kidney the secretion of urine goes on, although its excretion be obstructed; and it may continue under this altered and diseased state, and even when the natural structure is almost entirely lost†. Calculous matter may then affect the action of the kidney in various ways. It may merely afford a mechanical obstruction to the flow of urine into the ureter; it may stop up the tubuli uriniferi; it may excite spasm, and thus induce suppression of urine: it may excite inflammation, which, terminating in suppuration, may produce an abscess, which may point externally. Where a calculus is lodged in the kidney, the absorbents remove a portion of the kidney to make room for the stone, and they also absorb a portion of the urine itself.

The action of the kidneys may be impeded owing to their pelves being distended with urine, in consequence of the distended bladder in retention of urine.

Hydatids (of which Dr. Baillie describes two kinds), when present in the kidney, must interfere with its action.

It is unnecessary in this paper to enumerate the symptoms of these several affections of the kidneys, in which the secretion of urine is diminished. It is sufficient to point out, that in all these several affections the diminished *excretion* of urine depends upon diminished *secretion*. There may be frequent desire to make water; but there will be *no distension of the bladder*.

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* Baillie's *Morbid Anatomy*. † *Ibid.*

The second division of diminished excretion of urine is, "diminished excretion per urethram, the actions of the kidneys being natural, the diminished discharge arising from its evacuation by some other outlet." In the first volume of the Transactions of the College of Physicians at Philadelphia, there is a case of a girl, who, labouring under an inability to pass her urine by the urethra, vomited it for many months; some gravel was brought up by vomiting. Translations of urine, with urinary taste and smell of the saliva, with vomiting of urine, and urinary sweats, are noticed by Morgagni*. Heberden mentions a person who complained of an urinary taste; and Darwin notices cases of this kind. See also Warner's Surgical Cases. Cases of this kind are very rare; and they can never be mistaken for Retention of Urine, the bladder being empty.

The third division is "diminished excretion of urine, the action of the kidneys being natural, the diminished excretion arising from obstruction in the ureter." The obstruction in the ureter may be produced in various ways. The ureter has been found so much contracted as scarcely to allow the passage of air†. Hydatids are also met with in this duct. But the most common obstruction is a stone in the ureter; this may act mechanically, obstructing the passage of urine, or it may produce inflammation and its consequences. The ureter will sometimes be met with distended above the obstructing calculus to a very large size. These causes of obstruction may exist in one or both of the ureters. Le Dran mentions his having found strong concretions in the ureter, entirely filling it up; which, he observes, had probably been formed by the aggregation of an infinite number of grains of sand brought away from the kidneys. He never saw these concretions but in those cases where a stone had been long present in the bladder, rendering that viscus hard and callous, and thus contracting the entrance of the ureter into it; in consequence of which contraction the gravel was accumulated in the ureter‡. In this case of diminished excretion there is *no tension of the bladder*.

The fourth division of diminished excretion is, "diminished excretion of urine, the action of the kidneys being natural, the diminished excretion depending on absorption from the bladder." It is not necessary, in a practical view, to dwell long on this division. Supposing the urine to be secreted freely by the kidneys, and to have a free ingress to and egress from the bladder, it will follow its natural course through the urethra; but if any obstruction exist to its outlet, whether such obstruction be voluntarily imposed, or be the effect of disease, we find cases where, after the patient has had considerable fulness of the bladder, the tension subsides apparently from absorption of the urine. It need not be hinted that we are not to trust the relief of a full bladder to the absorbents of that viscus. For further remarks on this division, see Darwin's Zoonomia.

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* *De Sed. et Caus. Morb.* Epist. xli.

† *Ibid.* Epist. xl. 18.

‡ *Operat. Surgery.*

The fifth division is "diminished excretion of urine, the action of the kidneys being natural, the urine being poured into the bladder, and being there retained, *the bladder being distended.*" This is the true Retention of Urine, too often, even by eminent men, called Suppression. The causes of it are various, and may be considered as affecting the bladder, the prostate gland, the urethra, and the neighbouring parts.

Retention of urine occurs in paralysis from loss of power in the muscular coat, while the sphincter retains its usual power, the equilibrium between the expulsive and retentive powers being destroyed. If the desire to expel the urine, when urgent, be not complied with, it may happen that the desire will go off, and torpor of the bladder will be produced by over-distention. A similar state may be induced by obstruction in the prostate gland, urethra, or neighbouring parts. Curvature of the spine may induce a paralytic state of the bladder, as may also other injuries of the spinal marrow.

Cystitis is a common cause of retention. It may be a primary cause of retention, or it may be induced by it. Calculus is a frequent exciting cause of inflammation, which in that case will be chronic. The cause of cystitis may not be in the bladder: the inflammation may extend from some neighbouring part to the bladder; it may be seated in the peritoneal coat, or in the internal membrane. Retention of urine is frequently induced by some irritation in the neck of the bladder, or of the sphincter. This may be produced by the exhibition of drastic diuretics, or cantharides internally or externally used. Heberden mentions a case, where a perpetual blister had been kept up for five years by means of cantharides, without any affection of the bladder being produced, when sudden strangury came on, which could only be appeased by the healing of the sore *. He says also, that a blister, although kept on for only two days, has produced strangury, which has been troublesome for months. It is sometimes not easy to ascertain the cause of the urine being retained. Some persons seem to be subject to strangury, especially when they labour under any illness, though they apply no blister, and though there be no apparent cause of the complaint. Dr. Darwin notices convulsive strangury, which is periodical, and is sometimes so great in degree that convulsions and temporary madness close each period of it. The sudden application of cold may produce retention of urine. Calculi in the bladder may produce retention in various ways; they may produce inflammation; or a small calculus may insinuate itself into the neck of the bladder, and, remaining there, may prove a constant cause of irritation and of retention. Calculi with smooth surfaces may interfere with the egress of the urine in certain positions of the body, by falling upon the commencement of the urethra, and thus mechanically obstructing the passage. Rough calculi, of course, produce more evils than those whose surfaces are smooth. A calculus may produce all the bad effects of stone in the bladder for a time, and these may go off, leaving the patient ever after free from them. It does not follow that a rough calculus must be single, since many have been found at the same time in the bladder, the surfaces of which were all rough. The calculus may be situated between the coats, having a communication with the bladder, or being encysted. Women are not as liable to calculus in the bladder as men; for, in the first place, they are not so prone to the formation of it; and, secondly, when formed, it finds a more easy egress. The ages most subject to stone are, according to Dr. Austin, under puberty and towards the decline of life. This observation, he says, has few exceptions in men; but it does not apply to women.

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* *Commentarii.*

Hydatids which have passed from the kidney to the bladder may obstruct the flow of urine.

Misplaced gout is reckoned among the causes of retention of urine. Gout is often a remote cause, by producing a disposition to the formation of calculus.

Hernia of the bladder will more or less interfere with the egress of urine. It may take place under Poupart's ligament, through the ring, or into the vagina. It may exist alone, or in combination with intestinal hernia.

Fungous excrescences in the bladder may interfere with the discharge of urine. Warner, in his Cases, relates one of a woman who was seized with total retention from this cause; he removed the tumour by ligature. These cases of fungous excrescences, being attended with mucous discharge in the urine, and sometimes with bloody urine, have been mistaken for calculus; and it has happened that on the introduction of a catheter the patient has expired.

A polypus has been found growing from the inner surface of the bladder, of such a size as to fill up the cavity; but this is a rare occurrence. Ulcers in the bladder produce pain and difficulty in voiding the urine. The bladder may be filled with blood, which may interfere with the discharge of the urine.

The thickening of the coats of the bladder may bring on retention. The sympathy between the bladder and the urethra is so great, that a thickening of the one will bring on thickening of the other, and *vice versâ*, a thickening of the bladder being a common consequence of stricture.

Enlargement of the prostate gland is a common cause of retention of urine; but it is not necessarily so: for when the lateral lobes are enlarged, the diameter of the passage is increased, but the least enlargement of the posterior lobe forms a valve obstructing the flow of urine. The passage is sometimes rendered tortuous by one lateral lobe being enlarged more than the other, and by its jutting forth into the urethra, giving a curvature to that canal. In this case especially, where an over distended bladder is bearing against the commencement of the urethra, it is extremely difficult, and often impossible to pass a catheter or other instrument into the bladder. Sir Everard Home has remarked, that enlargement of the prostate gland occurs so rarely as an original disease in the early periods of life, that he has only seen two or three instances of it. In advanced age it is extremely common.

Calculus in the urethra may be retained there by its size, or by a stricture; more calculous matter may be deposited; and that which at first occasioned spasm and irritation only, and partially impeded the exit of the urine, may at last cause complete retention: not that it always is productive of great inconvenience; it may acquire considerable size in the urethra, and be troublesome merely from its weight and bulk. Warner mentions cases of this kind. A calculus is not often retained in the female urethra; and when it is, the passage is so short and straight, and admits of such dilatation, that it can generally be readily extracted; but in some cases it would be better to assist the extraction of it by an incision: for, although in the end it *may* pass without the use of the knife, yet ulceration and sloughing have been the consequences of the injury of the parts.

Extraneous bodies introduced into the urethra will excite irritation and spasm, and interfere more or less with the exit of the urine. Substances so introduced into the female urethra generally pass on into the bladder; while in men, from the nature of that passage, they stick generally in it. Substances have been introduced into the urethra by men, with a view of removing obstruction there: thus, a straw or a flower-stalk have got into the passage, and these produced great inconvenience and even death. The end of a catheter has broken in the urethra: this liability to break is one great objection to the use of the flexible metallic catheters and bougies. The caustic from an armed bougie has also escaped from the bougie, and remained behind in the urethra, producing there great irritation.

Whatever induces spasm of the urethra will impede the exit of the urine. Among causes of spasm of this canal are enumerated fractures, sprains, particularly of the ankle, cantharides, gout, cold, caustic applied to strictures, gonorrhœa, irritation from connection with a woman who has discharges from the vagina (not venereal), urine passing over ulcerations of the urethra, stimulating injections, or even the mildest injections, thrown in far and with great force. One species of stricture is the spasmodic; and the other, termed the permanent stricture, may be rendered yet narrower by spasm. Sometimes the urethra is so irritable, that even the mind alone may produce an irritable state of that passage. A great sympathy exists between the stomach and the urethra; so much so, that some substances taken into the former will instantly effect the urethra, even before the person can be supposed almost to have swallowed them. Heberden says he has known ischuria (retention I suppose) produced by vomiting. Spasm of the urethra may be brought on by onanism, or by blows on the perineum, or in very irritable urethras by certain smells, and by seeing a liquid flowing slowly, or coming by drops.

Tumours in the cellular structure of the urethra, excrescences in the urethra, inflammation of Cowper's glands, inflammation of the lacunæ, all these may impede the exit of the urine; the last, Sir Everard Home says, may produce spasmodic stricture beyond the lacunæ, (nearer to the bladder,) which stricture shall cease when the anterior obstruction is removed. Stricture in the urethra is a very common cause of retention.

After the destruction of the glans penis by ulceration, or mortification, the consequences of impure coition, the integuments may contract so as to close up the passage.

Home mentions an obstruction at the extremity of the male urethra, consisting of a contraction somewhat like a hymen, interfering with the flow of urine: in a case of this kind where the contraction had existed for ten years, on the removal of the obstruction the patient lost the power of retaining his urine, in consequence of the dilatation of the urethra from previous retention; but by degress he recovered the power.

Phymosis will more or less interfere with the exit of the urine. It may be natural, or the consequence of disease. Very troublesome cases of retention of urine are those, where, from phymosis attended with venereal sores being neglected, sloughing of the corpora cavernosa had taken place, the glans being destroyed, large clots of blood and putrid matter dropping from a large gangrenous cavity, and the urethra opening on an irregular sloughing surface.

Obstruction to the flow of urine may be produced by some cause which is not situated in the urethra, but in some neighbouring part.

The pressure made by an impregnated uterus on the urethra will bring on difficulty of voiding urine, and sometimes total retention. As pregnancy advances, this difficulty goes off; but it returns in the last stage of utero-gestation when the womb falls down. Other states of the uterus may interfere with the discharge of urine, as hysteroptosis, retroversion, hydatids, polypus, and other tubercles or excrescences, and scirrhus.

The passage of the child's head during labour may bring on retention of urine. Retention may be a consequence of labour, and may continue for several days after delivery.

Morgagni relates a case of scrotal intestinal hernia attended with retention of urine, and agrees with Sennertus and Cœlius Aurelianus, that it is usual for the bladder in cases of inflamed intestine, "in consensum trahi[*]."

Warner[†] mentions a case where an unusually large hymen produced retention of urine in a child three years old.

A diseased state of the rectum may produce retention of urine. A collection of feces in the lower part of the rectum may interfere with the flow of urine. Piles may irritate the neck of the bladder, and induce retention of urine. They may do this to an alarming degree where they are scarcely visible.

Pessaries in the vagina, pressing anteriorly on the meatus urinarius, will produce partial or total retention; this is particularly the case with the large circular pessary.

Tumours in the vagina, or abscesses of it, may interfere with the flow of urine. An effusion of blood into the cellular substance of the penis will more or less obstruct the flow of urine.

Ascarides in the rectum may also prove a cause of temporary retention.

From the foregoing sketch, it appears that the cases in which diminished excretion of urine is present are numerous, and widely differ from each other. I may have omitted much that ought to have been noticed; but I wish that I may have said enough to induce medical men to pause awhile, and to reflect upon the nature of the case, when a patient complains that he makes little or no urine, and not hastily in all cases to prescribe diuretics; which, in so many of the cases that I have pointed out, must increase the malady. In the first division of diminished excretion of urine only, and not in all the cases of this division, are diuretics indicated. In the other divisions, an increased secretion of urine will add to the disease, with the exception indeed of contraction of the urethra from the irritation of the urine in gonorrhœa, where it is adviseable to dilute the salts of the urine as much as possible. Where it is suspected that much urine is present in the bladder, and in fat persons this cannot always be distinguished by fulness about the pubes, a catheter, if possible, should be introduced. There exists a great prejudice in the minds of many to the use of this instrument. There may be so irritable a state of the urethra; for instance, after impure coition, and that where there is no gonorrhœa or venereal affection, as to render the patient utterly unable to pass a drop of urine for several days, yet the catheter shall pass without difficulty: I mention this, for I have been asked, in a manner that implicated censure for having done so, what, would you use the catheter in spasmodic stricture after coition? I would also repeat and enforce what has often been insisted on, which is, that force used in attempting to pass the catheter must do harm; and, yet, every day repeated violent efforts are made to pass it, until the urethra is rendered far more irritable and more universally so than before; and that degree of spasm, which in the first instance would have yielded to gentler attempts, or to opium and tobacco, or bleeding and the warm bath, is so far and so permanently increased, that nothing is left but to use the trochar.

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[*] *De Sed. et Caus. Morb.* Epist. xxxiv. 7, 8.

[†] Cases in Surgery.

II.

Observations on the Preservation and the Insertion of the Vaccine Lymph. By Edward Leese, Baker Street, Member of the Royal College of Surgeons, London.

The paper by M. Giraud, in the *Repository* for September last, has induced me to say a few words on the subject of preserving vaccine virus in the most efficient state for inoculation; hoping thereby to prevent, in some degree, the necessity there frequently has been to repeat the operation, from its having failed to produce the desired effect.

About six years since, I forwarded to the Board of the *National Vaccine Establishment* some of the glass tubes invented by M. Giraud; and I am very glad to find them noticed favourably in the last Annual Report of this Institution. In April last I used the virus from a tube of M. Giraud's, in which it had been preserved *fluid* more than three years. It was followed by the desired effect. The length of time it had been kept, was more than sufficient for conveying it to the most distant part of the world.

The crusts that fall off from the inoculated part about the twentieth day, have been used for vaccinating after long keeping; but I have more than once known them to excite a vesicle of diminutive size, with an imperfect areola, and a light brown scab, very likely to deceive the patient or a juvenile practitioner, and to give trouble and disgust by the necessity of a subsequent inoculation.

The small glass plates are not charged without disturbing the vesicle and wasting the virus; and, when charged, they cannot be brought into use without exposure to steam, &c. They are therefore objectionable.

Fluid matter instantly taken from one arm and introduced into another, is doubtless to be preferred when attainable; but as this cannot always happen to some practitioners, it behoves them to adopt other methods that come the nearest to it in success. If the virus is likely to be applied within twenty-four hours, it may remain on a steel lancet without deterioration from rust; but if it is to be conveyed into the country, and two or three days are likely to elapse before it is used, there is no mode equal to the ivory points introduced to notice by Mr. King. I have sent them to the West Indies and the Cape of Good Hope, where they have proved efficient. They are charged without violence to the vesicle, are particularly portable, and handy for application; and require no other moisture than what is to be found under the cuticle. From the station in St. Mary-la-bonne parish, I supply many hundreds of such charges to different practitioners; most of whom inform me they seldom fail to produce the disease with them: and by personal experience I know they seldom fail, if the previous puncture with the steel lancet is not made too deep, thereby allowing blood to escape—the most frequent cause of disappointment, whether the virus be dry or fluid. Something depends on the lancet. I am in the habit of shaping mine to an obtuse point on a hone; and when they are so formed, little if any blood issues from the puncture, and infection is almost certain.

The vaccine process (for it is too mild to be termed a disease) not being followed by an eruption, it is frequently difficult to ascertain whether a constitutional effect is produced. It is admitted that a variolous pustule may be local only; so may a vaccine vesicle; and the system at large not being acted upon by it, the patient cannot be expected to be secure from subsequent small pox. These considerations make me prefer a second insertion of virus*, by which the vaccine excitement is prolonged, and the constitutional action ascertained.

III.

Remarks on Scripture Midwifery; and on some Circumstances connected with the Female Habit, mentioned in the Sacred Writings.

THE first mention that is made of a midwife is in Genesis xxxv. 17. This midwife attended Rachel in her second labour, and she lost her patient. A midwife is mentioned as having attended Tamar, Genesis xxxviii. 28. The only remaining place where midwives are mentioned, is in Exodus i., where Pharaoh orders the Hebrew midwives to destroy all the male children. It would seem that there were only two females who practised midwifery among the Israelitish women, and that these two had all the practice to themselves, since no orders were given to any Egyptian midwife. The names of these obstetricians were Shiphrah and Puah. They had too much humanity to obey the savage commands of Pharaoh; and they sheltered themselves from punishment, by saying that the Hebrew women had such quick labours as to be delivered before they could arrive.

The first mention of menstruation is in Genesis xviii. 11, where Sarah, who is about 80, is said to have "ceased to be after the manner of women;" and on account of this and of her great age, she ridicules the idea of her having children, as well as of her deriving gratification from the pleasures of the marriage bed.

Menstruation is next mentioned in Genesis xxxi, 35; and what is singular, this appears to be a feigned case; for Rachel, who had stolen her father's images when she absconded with Jacob, being pursued and overtaken by her father, hid the images in the camel's furniture, and sat upon them; apologizing to her father for not rising, saying that "the custom of women was upon her." By the Mosaic law, a menstruating woman was held to be "unclean;" and it was a heinous crime for a man to lie with a woman in this state. Leviticus xv. 24, xx. 18; Ezekiel xviii. 6. It is said in Lamentations i. 17, "Jerusalem is as a menstruous woman among them." Bathsheba's purification from her uncleanness is mentioned in 2 Samuel xi. 4. The follies of idolatry are pointed out in the Apocryphal book, Baruch vi., where, among other things, it is said, "Menstruous women, and women with child, eating of the Sacrifices." Every thing connected with this periodical excretion seems to have been an object of contempt and disgust. Isaiah, speaking of the graven images of silver, and the ornaments of the molten images of gold, says, "Thou shalt cast them away as a menstruous cloth," xxx. 22; and in the Apocryphal part of Esther, she is made to say that she "abhors" the insignia of her high estate "as a menstruous rag." The last mention made of menstruation is in 2 Esdras v. 8.

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* Vide *an Explanation of the Causes why Vaccination has sometimes failed to prevent Small Pox,* published by Underwood in 1812,

Barrenness was considered as a disgrace, and as a sign of Divine displeasure: in many places it is called a "closing of the womb." Sarah, Rebekah, Rachel, Manoah's wife, and Hannah, were all considered as barren, yet they all became mothers. The Lord is said to have fast closed up all the wombs of the house of Abimelech, because of Sarah. Genesis xx. 18. It is promised to the people, that if they will obey the Lord, they shall be blessed above all people; "there shall not be male or female barren among you or among your cattle." Deut. vii. 14.

The sheet stained on the bridal night was the test of the woman's virginity. Deut. xxii. 15, 17, 20. When the Medianites were defeated, Moses was induced to keep alive all the virgins, amounting to 32,000. Numbers xxxi. 35.

Nine months are mentioned as the period of utero-gestation. In the Apocryphal book, 2 Esdras iv., it is written: "Go thy way to a woman with child, and ask of her, when she hath fulfilled her nine months, if the womb may keep the birth any longer with her? Then, said I, no, Lord, she cannot." v. 40, 41. In 2 Maccabees, vii. 27, the woman says, "O, my son, have pity upon me, that bare thee nine months in my womb."

No mention is made of miscarriage, except a bare mention in Job iii. 16, "or as an hidden untimely birth I had not been." "The untimely birth of a woman," Psalm lviii. 8. "An untimely birth is better than he," Eccles. vi. 3.

Labour-pains are mentioned in numerous places. "Pain as of a woman in travail," Psalm xlviii. 6. "My loins filled with pain: pangs have taken hold upon me as the pangs of a woman that travaileth," Isaiah xxi. 3. "Like as a woman with child, that draweth near the time of her delivery, is in pain and crieth out in her pangs." Isaiah xxvi. 17. "A voice as of a woman in travail, and the anguish as of her that bringeth forth her *first* child." Jeremiah iv. 31. "Wherefore do I see every man with his hands on his loins as a woman in travail?" Jeremiah xxx. 6. Pains of labour are mentioned in many other places. Women when in labour were placed (at least Pharoah says so) upon the stools, whether this was a chaise percú, as used by latter practitioners, others must determine.

The cases of labour in Scripture are very few, and these few are very briefly detailed: they are the cases of Rebékah, of Rachel, of Tamar, and of the wife of Phinehas. The first and third were twin cases, the second and fourth were fatal cases. In the case of Rebekah, both the children appear to have presented properly, for the last-born followed the first rapidly; the last took hold of the heel of the first. Rachel had a "hard" labour. The midwife said to her, "Fear not, thou shalt have this son also. And it came to pass, as her soul was departing (for she died), that she called his name Benoni, or the son of my sorrow." This was her second labour. Now it does not appear how the midwife knew that the child was a boy, she said "thou *shalt have*:" if the head presented, it could be mere guess, such as our modern midwives are fond of indulging in. The breech might have presented, and the midwife could thus have been enabled by examination to determine what the sex was; and this would account for the labour being a "hard" one; in a foot presentation the labour would scarcely have been so severe; and besides, it is not probable that the midwife would have waited for the natural expulsion of the body of the child, had the feet presented, unless she were gifted with more prudence and more patience that our modern good-women. The case of Tamar was a twin-case; a hand appeared; the midwife tied a thread round it, to mark it as having gained precedence; and what is singular is, that the hand receded, and the other child came down, and was born first. The wife of Phinehas was near her time; when, hearing that the Philistines had taken the ark, and that her father-in law and her husband were dead, labour came on, and she bowed herself and travailed. And the women who stood around her said, "Fear not, for thou hast born a son: but she answered not, neither did she regard it, for she was dead." This, perhaps, might be a case of puerperal convulsions.

No case is related of a still-born child: but Aaron, seeing Miriam's leprosy, says, "let her not be as one dead, of whom the flesh is half consumed, when he cometh out of his mother's womb." Numbers xii. 12.

The only mention of monsters is where, among the signs of the times to come, it is said, "Monstrous women shall bring forth monsters." 2 Esdras v. 8.

As to the management of new-born infants, it is only said in Ezekiel xiv. 4, "and as for thy nativity, in the day thou wast born, thy navel was not cut, neither wast thou washed in water to supple thee, nor salted at all, nor swaddled at all."

Of infants dying early, the only cases are that of David's child, who died on the seventh day (2 Samuel xii. 18); and that of the child of one of the harlots (1 Kings iii. 19), which was overlaid by its mother.

The mothers suckled their children. One of the harlots got up the third day to suckle her child. They appear to have kept them long at the breast. Hannah would not go up to the temple until she had weaned her child Samuel; and then, said she, "I will bring him, that he may appear before the Lord, and there abide for ever." And when she had weaned him she took him up with her. And the woman in Apocrypha, 2 Maccabees vii. 27, says to her son, "I who gave thee suck three years."

Though it is nowhere said that women giving suck do not conceive readily, yet, in Hosea i. 8, it is said, that "when Gomer had weaned Sorahamah, she conceived and bare a son."

IV.

A Case of Union of a Finger divided at the Middle Joint. By S. Peacock, Surgeon, Liverpool.

The union of parts by the first intention has lately excited an additional interest, in consequence of the surprising results of Dr. Balfour's experiments, and of the reasoning of certain physiological speculators; by which the operations of Nature in that process have been attempted to be explained upon new principles. The following case, therefore, will, I trust, be not unacceptable to the readers of the *Repository.*

On the 10th of August 1816, I was requested to visit S. E. a young gentlemen of about ten years of age. I found that the forefinger of his left hand had been divided through the middle joint by a carving knife, so completely, that the part of the finger beyond the division was hanging by a piece of the integument, not thicker than a common probe: all the ligaments and blood-vessels, also, were completely divided. I put the parts together, and kept them in their natural position by adhesive plaster, and a pasteboard splint applied along the lower part of the finger. At the distance of four days the wound was examined, and found to be looking well. But the part of the finger which had been separated was cold, and the rest of the hand swollen and painful. On the sixth day it was again examined: the wound was nearly healed, and the swelling of the hand had considerably subsided; but the natural warmth had not yet returned to the separated portion. On the eighth day the wound was completely healed. At this examination the splint was removed; and I recommended an attempt to be made to move the joint once or twice a day. From this time the heat returned gradually to the divided portions, and the motion of the joint improved from day to day. The warmth and sensation of the finger are now natural throughout, and the motion of the joint is as free and extensive as that of the same finger on the other hand, or as it was in this before the accident.

V.

Cases illustrative of the Efforts made by Nature for the Cure of Diseases. By WILLIAM NEWNHAM, Surgeon-Apothecary, Farnham, Surry.

THE extraordinary powers of Nature in repairing the injuries the animal system has sustained, have frequently attracted the notice of medical men; and have been employed, on the one hand, as a stimulus to the enlightened practitioner to assist her efforts, even under circumstances the most hopeless; and, on the other, as a ground for indolence to those who sceptically disbelieve the powers of medicine, and who are inclined to leave Nature, in every instance, to do the best she can, without assistance. It is for the encouragement of the former class, and for the purpose of recording such facts, that I have been induced to extract the following cases from my note book—cases exhibiting the struggle which Nature sometimes makes for the cure of disease, and in one instance her *complete success.*

CASE I.

JOHN SPREADBOROW, aged forty-eight, became my patient in February 1815. He had been ill for a month; but had been rather neglected. On finding that he had not been properly attended, I complied with his earnest entreaty, and visited him gratuitously until he died.

Under these circumstances I could obtain no correct history of the patient's case, except from himself. He informed me that he had taken cold about a month before, and had had much fever, with a pain in his side; and that now, although he was much better, he did not get well. From the prevailing diseases in the preceding January, and from his own account, corroborated by the reduced circumstances in which I found him, I conjectured that he had been the subject of inflammatory action, attacking some internal viscus. He now complained chiefly of his back and hip, both of the left side. His bowels were constipated, and he had an abscess forming under the fascia of the right arm. This was immediately opened, and a great quantity of pus was discharged: the abscess healed kindly in a few days. My attention was principally drawn to the state of the alvine excretions, and I procured early a fe stools, extremely dark coloured, of a pitchy consistence, and insufferably offensive. I gave him three grains of pilula hydrargyri every night at bed-time, and a sufficient dose of oleum ricini next morning, to procure two or three stools daily; and in the mean time supported his strength by a nutritive, but not stimulant, diet, in union with infusion of serpentaria, combined with the solution of acetate of ammonia. In a few days his tongue became clean, his pulse calm and firm (about eighty), his appetite improving, and the stools almost healthy.

This amendment was, however, of transient duration; for presently his tongue became loaded, and his pulse quick and hard. He had irregular rigors, constant evening accession of fever, and morning perspirations. These symptoms were accompanied with œdema and loss of voluntary motion in the left arm, which became every day more and more aggravated. At this time a small tumour appeared just above the clavicle, which the patient complained of as being painful, and the pain extending down the œdematous arm. The tumour gave the sensation of an obscure fluctuation; but it was so hidden behind the clavicle, that it was very indistinct. He now complained of cough and dyspnœa, his hectic symptoms daily increased, and his strength declined. On the morning of the 8th of March, I found that he had passed a restless night, from cough and extreme difficulty of breathing; and so urgent was the latter symptom, as almost to threaten suffocation. Believing these symptoms to arise from effusion into the chest, and thus being confirmed in my previous idea that the little tumour above the clavicle contained pus, which also, I had reason to suspect, communicated with the chest, I inserted a lancet, and discharged more than a pint of fœtid pus. This afforded the patient some relief; and for a few days his symptoms were mitigated. The discharge of purulent matter continued very great, the œdema of the left arm gradually subsided, the cough and mucaginous expectoration diminished, the hectic symptoms abated, and his pulse was reduced from 100 to 96 strokes in a minute; while his appetite daily improved. The relief thus procured was nevertheless only temporary; for in a few days he became the subject of slight diarrhœa, the alvine excretions, although mixed with fœculent matter, consisting principally of a dirty black liquid, greatly resembling the grounds of coffee; and, notwithstanding every remedy, this continued increasing. In the last stage of his illness he took small doses of hydrargyrus cum cretâ, with infusion of cascarilla. On the 17th of March he again experienced difficulty of breathing; which symptom gradually increasing, his strength failed, his pulse rose to 160 in the minute, and he expired on the morning of the 20th.

Dissection.—The examination of the body took place on the 21st, thirty-four hours after death; when the following were the morbid appearances observed on dissection.

The *intestines* were much inflated with air, but presented no traces of organic læsion.

The *liver* was much enlarged, and, on cutting into its substance, presented a granulated appearance: disease here was not far advanced, and was probably only a consequence of other more important deviations from healthy structure.

The *stomach* was much distended, and adhered to the left lobe of the liver, by a portion of its surface exceeding the size of a half-crown piece. These adhesions were recent, and lately torn up; thus bringing to view a considerable ulcer of the stomach, which had destroyed even its peritoneal coat, and excavated the corresponding substance of the liver to a considerable depth. On the internal coat of the stomach the ulceration had extended much further; and this viscus was filled by a large quantity of a liquid resembling diluted coffee grounds, which was evidently the source of the alvine morbid excretions. Its mucous membrane presented several other small ulcerations.

The *spleen* was exceedingly soft in its texture; was enlarged; contained a considerable quantity of purulent matter; was adherent to the diaphragm to a considerable extent, and presented to it an ulcerated surface of more than three inches in length, covered with dark-coloured pus, as if largely impregnated with the red particles of the blood.

The *diaphragm* displayed a corresponding ulceration; that is, a communication had been formed by the ulcerative process between the spleen and the left lobe of the lungs.

The *lungs* were healthy in their external characters, save at the ulcerated communication with the diaphragm, around which were newly-formed adhesions of the pleuræ. There was likewise considerable general adhesion of the pleura pulmonalis to the pleura costalis of the left side, particularly at the upper part of the sternum. The substance of the lungs was healthy and natural, except in the immediate route of a channel for the discharge of pus, which had been formed through the substance of the left lung, from its adhesion to the diaphragm, to its superior surface. This channel opened about an inch and a half below the superior extremity of the sternum; and *there* burrowing through the cellular membrane of its posterior surface, it communicated under the clavicle with the external opening. Where the pus made its appearance on the superior surface of the lung, adhesions had been so formed in the neighbourhood, as to leave but a comparatively very small surface for it to lodge in, and no way of escape but through the external aperture already mentioned.

The *heart* and its appendages were quite healthy.

It is worthy of remark, that, in the progress of this disease, there was never any sickness, nor the smallest head-ache.

Case II.

On the 31st of May 1816, I was hastily summoned to Susannah West, ætat. thirteen or fourteen, whom the messenger informed me was dying. On my arrival I found her in a state of faintness, succeeding that of violent excitement and convulsion. A slight convulsion occurred in my presence, and she relapsed again into a state of quiescence and insensibility. She breathed with difficulty, and expiration was attended with a rattling noise. Her pulse was exceedingly rapid, and so feeble, as to be counted with great difficulty; and she was unable to give any account of her sensations. Upon inquiring of her friends, I found she had complained, for months past, of pain in the right side; but unattended with any other symptoms of marked disturbance in the constitution. Yesterday she was taken particularly poorly, and, returning early from school, complained of increase of pain in the side, cough, and sickness; passed a restless night; and on rising this morning, was attacked as above described. As the dyspnœa was urgent, and threatened suffocation, apparently from a loaded state of the bronchial tubes; and, as it was impossible to obtain any information of the patient's feeling, I directed an emetic to be given immediately, and, an hour after its operation, some powders of calomel and jalap, to clear the primæ viæ. The pediluvium to the feet was also advised.

In the morning I found the emetic had operated well, and the patient had had one dark-coloured motion. The pulse was now 120, and very weak; and the cough troublesome: but the pain in the side, the dyspnœa, and the insensibility had subsided. I ordered her to continue the powders, in order to produce a full evacuation from the bowels, and to apply a large blister on the chest.

June 1st.—This morning an eruption of urticaria febrilis has appeared on the patient; but there is no remission of symptoms. The bowels have been thoroughly evacuated. There is a copious expectoration of matter which is decidedly *purulent*, and so dreadfully offensive, that it is hardly possible for the attendants to remain in the room. I ordered an antiphlogistic vegetable diet; and, for the medical treatment, antimony, digitalis, and liquor ammoniæ acetatis, 4tis horis.

For a few days my patient appeared to improve. The pulse fell to 100 in a minute, and the sputa ceased to be purulent: still there was a great deal of cough and mucaginous expectoration. On the 6th of June I directed for her the infusum rosæ, with small doses of tinctura digitalis, tinctura scillæ, and sulphas magnesiæ. She, nevertheless, grew rather worse than better; the mucaginous sputa were intermixed with fragments of a dense nature, white, and opaque. From the extreme ignorance of the relatives and friends, and a mistake which they made as to the nature of my inquiries, I was not informed of this appearance of the expectorated matters till about the 20th of June; at which time the daily increase of the symptoms, the increase of cough and pain in the side, the entire loss of appetite, hectic fever, and night perspirations, together with the extreme emaciation of the patient, had excited the most serious alarm for her safety. She has of late taken small quantities of animal food, table beer, and wine and water; but she is daily worse, and the whole of these are now absolutely and entirely interdicted.

On the 22d her expectoration was again decidedly purulent and highly offensive. Her debility was great; her pulse 110 in the morning and 140 in the evening; while the cough was increasing and often occasioning nausea and vomiting. She takes no nourishment, (a vegetable diet was allowed her,) and gets no sleep. This day I examined the sputa more particularly, and I found in it several portions of a dull white shining substance, which, on washing it, I ascertained to be fragments of membrane. This circumstance now first gave me the idea of the presence of hydatids, which the existing disturbance of the system had been excited for the purpose of removing. On this day I was informed, that a similar appearance had been remarked in two evacuations from the bowels.

On the 24th I found my patient much worse. She had passed a sleepless night, and was now incessantly coughing and retching. The sputa were extremely offensive and in an enormous quantity. Half-a-pint was expectorated in a few minutes while I was present, and the friends conjectured they had thrown away a full quart expectorated in the preceding two hours. I examined minutely the expectorated matter, and I found it to consist of thin purulent matter and a great number of hydatid cysts, varying in size from that of a common garden pea to that of a large marble, or even larger. I now certainly expected that my patient would sink under such a terrible disease, and I directed for her only extractum hyosciami gr. iij ter quotidie. The coughing and nausea continued, as the relatives informed me, for two hours; during which time another equal quantity of matter was expectorated, which was immediately thrown away from its extreme fœtor; but soon afterwards the patient sunk exhausted upon her pillow and got some sleep.

The next day she was better. The pain in the si mitigated, and the cough less troublesome. But Wed

(26th) presented the same scene as Monday, only in a less violent degree, the sputa being the same.

On the 27th the pulse had fallen to 90, and the tongue was cleaner.

The following day there was a slight return of cough and purulent expectoration, with the expulsion of four or five entire hydatids; but the pain in the side was gone; the tongue was clean; the appetite for vegetable food good; the bowels regularly open; the pulse 60, small and regular, without dyspnœa or any increased quickness of circulation at night, accession of fever, or morning perspiration.

From this day no more hydatids were expectorated, and the sputa diminished daily, though it was still purulent and offensive. Her strength was gradually improving. On the 3d of July, she informed me she had expectorated but three times in the last twenty-four hours; and on the following morning, that the expectoration had wholly ceased. From this day she continued convalescent.

On the 6th of July I found her without any complaint; her pulse was 70; her tongue clean; her appetite good; and her bowels regular. She slept well; had no cough, nor pain in the side; could fully expand the chest without uneasiness; and was gaining strength. She still lived upon a vegetable diet almost exclusively, and was directed to continue the same, and also the extractum hyosciami for a few days.

After this time the patient gradually returned to her usual mode of living, regained her strength and flesh, and has continued to this day (Sept. 22d) perfectly free from complaint.

From the detail of this case, and the recollection that matters resembling the sputa were observed in considerable quantity in the stools on the 21st and 22d of June, I think I am justified in inferring, that the cause of this disturbance was the presence of *hydatids in the liver*. These, probably from the continued pain in the side without much constitutional irritation, had been long in forming and increasing. The symptoms of the 31st of May are to be accounted for, from the abscess, formed for the discharge of the hydatids, bursting into the lungs, and occasioning an immediate disturbance of the cerebral functions, and subsequently of the whole system; which, it is evident by the detail of symptoms, was vehemently excited. The treatment of such a case could only be conducted on general principles: but its history is valuable, in as much as it adds to the store of pathological facts, proving to how great an extent important viscera may be diseased without much disturbing the constitution, at least for a time; and how extensive are the powers of Nature in endeavouring by her unassisted efforts to repair and restore diseased organs.

VI.

An Account of an Improved Blow-Pipe. By JAMES EDWARDS, Putney, Member of the Royal College of Surgeons.

THE following description of a blow-pipe much more powerful than any I have yet seen, may be considered of sufficient interest to be given to the public, through the medium of the *Repository*. It is not my intention to arrogate to myself the merit of a new discovery; the plan I have adopted being merely a variety in the application of Mr. Newman's valuable blow-pipe, which acts by means of condensed air*.

The body of the apparatus is a box, or hollow cube of about eight inches diameter, made of sheet-iron, and divided perpendicularly into two equal compartments, by means of a sheet-iron partition, so as to form, as it were, two separate boxes. About the center of the top of each is an aperture furnished with a screw, to which a stop-cock, or Mr. Newman's condensing syringe, may be fitted.

Near the center of one of the sides into which the partition is fixed, there are two stop-cocks communicating with the two cavities, and soldered into a cap or taper piece of brass, through which two capillary holes are drilled, uniting at the apex, and forming there but one aperture for the current of gas.

In one box previously exhausted of air I condense oxygen, and in the other hydrogen, by means of a condensing syringe. I am thus enabled to use these gases either separately or together; but it is from the combination of the two gases, that I have obtained a much greater degree of heat than can be produced from them separately, and very far exceeding that procured in the usual way, or from condensed atmospheric air. I have had it in contemplation to try phosphoretted hydrogen; but I have not yet had an opportunity of so doing.

It is not my intention to detail the few trifling experiments I have hitherto had time to perform; suffice it to say, that platina is as readily fused by the ardent flame procured by the admixture of the gases in this blow-pipe, as silver would be in the ordinary way; and I feel perfectly satisfied that those who are disposed to try it, will find it answer their most sanguine expectations.

⁂ Since the above was written, I have been informed there is an account in the third Number of the Journal of Science and the Arts of a very powerful blow-pipe; but as the combustion of condensed oxygen with hydrogen when combined in the same chamber, must, in the hands of the inexperienced, evidently be attended with considerable danger*, I flatter myself, that the mode of application I have pointed out, may still have its advantages; being perfectly free from any kind of risk.

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* For an account of Newman's blow-pipe, vide *Journal of Science and the Arts*, vol. 1. p. 65.

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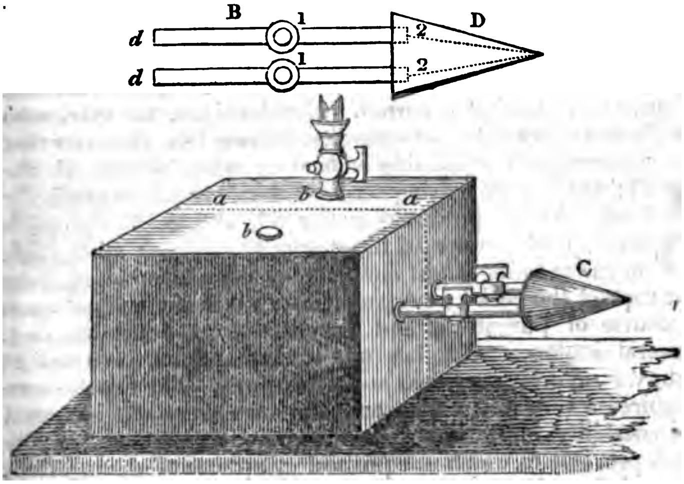
* It is proper to state, that in this supposition Mr. Edwards is mistaken. Dr. Clark, in the paper referred to, (Journal of Science and the Arts, vol. ii. p. 104.) observes, "it has been said, indeed, that '*the danger lies in the chance of a retrograde movement of the flame, which may be drawn backwards towards the reservoir, and thus cause it to explode.*' I have seen this retrograde movement of the flame very often; it happens when the current of gas is feeble; either when the reservoir is nearly exhausted, or when the current is suppressed in the beginning of an experiment. But the flame is instantly extinguished by turning the valve; and if it be not thus extinguished, it will be drawn backward only about half an inch; when, after splitting the end of the glass tube, it goes out of itself."

The paper from which the above extract is taken, displays, in a very striking manner, the extraordinary power of a capillary stream of a condensed mixture of oxygen and hydrogen gases. Of the simple substances exposed to its action, *lime*, *silex*, and *alumine* were fused, as were also the following metals:—*platinum*; *palladium*; *copper wire*; *plumbago*; *red oxide of titanium*; *blende*, which was also partly volatilized; *brown and yellow oxides of platinum, precipitated from the solution of the metal in nitro muriatic acid, by the muriate of tin*; *grey oxide of manganese*; *wolfram*, which was reduced and fused; *sulphuret of molybdenum*, which was also reduced and fused; *black oxide of cobalt*; *pechblende*; *siliciferous oxide of cerium*; *chromate of iron*; *ore of iridium*, which was fused and vitrified. The following were comsumed:—*brass wire*; *iron wire*; *red ferriferous copper*; and *metalloidal oxide of manganese*, which was reduced to a white metal that consumed like iron: whilst *pure gold fused with borax* was nearly all volatilized, exhibiting during the combustion an extremely beautiful halo of the most lively rose colour.

Of the refractory native compounds, some were fused and vitrified, and others converted into enamels. Among the former were, *rock crystal*; *white quartz*; *Egyptian jasper*; *spinelle*; *sapphire*; *hyperstene*; *talc*; *serpentine*; *lazulite*; *Peruvian emerald*; *Siberian beryl*; *potstone*; *pagodite of China*; *Iceland spar*, the fusion of which, like that of pure lime, exhibited a pure lambent flame, of a deep amathystine hue; *arragonite*; *marekanite*, &c.: among the latter, *noble-opal*; *flint*; *chalcedony*; *zircon*; *topaz*; *cymophane*; *pycnite*; *andalusite*; *wavellite*; *rubellite*; *cyanite*; *hyalite*; *apatite of Estramadura*; *sub-sulphate of alumine*; *chalk*; and *hydrate of magnesia from America*, the enamel formed from which was encrusted with a thin superficies of limpid glass.

Metals were obtained from silex, barytes, and strontian; but the alkalies were instantaneously fused and dissipated. A fine octahedral diamond, of an amber colour, weighing six carats, was completely volatilized in three minutes.



DESCRIPTION OF THE CUT.

A. The box, forming two gas holders, by a division in the centre marked *a. a.* on each side of which the top is perforated at *b. b.* with apertures for stop-cocks, or condensing syringes: C. the part of the apparatus through which the gases pass in a united stream at the apex of the cap.

B. A plan of the part C, consisting of two tubes *d. d,* furnished with stop-cocks at 1. 1, and screwed into the brass cap D; in which the dotted lines 2. 2. mark the capillary perforations.

AUTHENTICATED CASES, OBSERVATIONS, AND DISSECTIONS.

XXXVII.—*A Case of Mania.*

THE case of mania, marked as having terminated fatally in the last Register of Diseases*, might be termed *puerperal,* although it began to shew itself two months at least before confinement. The subject of it, a lady between thirty and forty years of age, was pregnant of her fourth child, when the symptoms first appeared.

During the period of her nursing her third child, owing to improper indulgence, and the system of swilling nurses with porter, which is too prevalent, she was attacked with a fit, somewhat resembling apoplexy, which was however relieved by bleeding and purging: and the Reporter has not been able to ascertain whether it returned before he was called to attend the patient, which was in the night, six weeks before her confinement. She was much relieved before his arrival; but when he saw her, the mind appeared confused, and she could give no account of any thing that had occurred. Her husband, however, who had been awakened by her struggles, informed the Reporter that she appeared as if suffocating or fainting when he first felt she was ill; but that on raising her head those symptoms gradually subsided. As the pulse was under 60, and evidently much oppressed, twelve ounces of blood were immediately abstracted; and in the morning eight ounces more were taken away from the nape of the neck by cupping: after which she was put upon a course of purgatives, and restricted to a vegetable diet. Several similar attacks, but of a slighter nature, occurred at intervals, and were relieved in the same way. The countenance acquired a very sallow hue, and the nervous system increased in irritability, until very near the period of delivery, a few days previous to which unequivocal symptoms of derangement shewed themselves.

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* Vide *Repository* vol. vi. p. 348.

When labour at length came on, the expulsion of the child was almost instantaneous, and the placenta followed in a few minutes. She could not be persuaded that she had been delivered, and would not suffer the child to be brought near her. As she was very delirious during the succeeding day, and there was no appearance of lochial discharge, she was again bled freely, and a brisk cathartic exhibited; but as no amendment followed, a consultation was requested, and a physician of high character called into attendance.

The antiphlogistic plan was now vigorously pursued, with the addition of shaving the head and sponging it with a cooling lotion. The alvine excretions continued excessively dark coloured and offensive; scarcely any lochial discharge shewed itself; no milk was secreted; and the mental aberration remained unabated; but the febrile symptoms were evidently diminished.

On the morning of the tenth day after delivery she appeared much better in every respect; but towards the middle of the day she was suddenly attacked with symptoms very closely resembling those of catalepsy. She lay in a state of complete insensibility, from which she could not be roused, although pricked with pins, and otherwise stimulated. Her speech was lost, and deglutition was impeded so much, that scarcely a few drops of fluid could be swallowed; but there was no rigidity of the members, and the iris remained sensible to the light of a candle, and was not much dilated. To relieve this state she was cupped on the temples, blistered on the scalp, had sinapisms applied to her feet; and enemata with assafœtida and camphor exhibited.

About midnight she again became sensible, regained her speech, and continued apparently improving every day, until the same day of the following week, when she sunk suddenly and rapidly, and expired early next morning. She never complained of her head until a few hours before dissolution, when she repeatedly exclaimed "Oh! my poor head!" and at this time, also, the pupils became dilated, and insensible to light.

Dissection.—On opening the head the dura mater adhered firmly to the cranium, and appeared more vascular than usual towards the occiput. Directly under this part, the pia mater displayed appearances of considerable inflammation having existed, and the hemispheres, as far as under the coronal suture, were covered with coagulated lymph, which glued them together. An ounce and a half of serum was also found effused between the membranes. There was no water in the ventricles, a circumstance which explained the nondilatation of the pupils. The rest of the brain was apparently healthy.—T.

XXXVIII.—*A Case of Abortion, accompanied with Hydatids.*

The subject of this case was a young woman about twenty-three years of age. The abortion was marked by the peculiar circumstance of the ovum being enveloped in a large mass of hydatids, clustered together like bunches of grapes, not less in weight than three pounds, besides a pound of coagula. There was much flooding and pain attending the expulsion; and the patient was extremely reduced; but soon fully recovered. It was the third month of her pregnancy.

XXXIX.—*Two Cases illustrative of the Advantages of the Ring Pessary.*

In a case of procidentia vesicæ, in a married woman about fifty years of age, the disease was completely relieved by the introduction of a ring pessary. The bladder descended, covered by the vagina, between the labia, forming a swelling externally, which prevented micturition, unless aided by the hand of the patient. She sometimes was twelve hours without emptying her bladder, which occasioned considerable distress, and obliged her to lie down, and use much force to relieve herself. She suspected her disease to be procidentia uteri, until the case was properly investigated.

In a similar instance, which occurred in a young married woman about twenty-five years of age, the globe pessary was tried; but did not answer: the ring answered better, and finally succeeded in relieving her.

PART II.

ANALYTICAL REVIEW.

I.

Practical Illustrations of Typhus, and other Febrile Diseases. By JOHN ARMSTRONG, M. D. 8vo. pp 305. London, 1816. Longman and Co.

OUR Readers are not unacquainted with Dr. Armstrong's rank in medical literature. His Treatise on Puerperal Fever demonstrated his talents for elucidating an obscure subject, and stamped his character as a bold practitioner and an original thinker. The direction of such a mind to the investigation of any subject, is almost an earnest that the results, when committed to the press and embodied in the form of a book, will repay the attention which the reader may bestow on its perusal, by at least presenting the subject in some new point of view, if it afford no other novelty.

We are informed, in the preface to the volume before us, that it "is a part of the series of commentaries on acute diseases promised at the publication of some facts concerning puerperal fever;" that from the observations made during an extended practice of many years, the author's views on febrile affections have gradually and greatly changed; and, under the impression that an exhibition of these would not be wholly useless, he has thought proper to lay them before the profession. In regarding the motives which produce any work, although the intentions of the author be allowed to be praiseworthy, yet the value of his exertions must be judged of from the examination of the work itself; and, in presenting a brief sketch of the contents of Dr. Armstrong's volume to our readers, we shall endeavour to put them in possession of the means by which they may pronounce an impartial judgment. The subject is certainly one of high interest; and, as the treatment of general fever has always more or less regulated that of almost all acute diseases, it has occupied the attention of the most celebrated medical philosophers in every age of the profession. One theory has successively yielded to another; and each have for a time regulated the practice of those who rather act than think. It would indeed be gratifying, could it be said that these changes have been beneficial in the order of their progression to the present period, but as this cannot be affirmed, we must not be so presumptuous as to consider the existing opinions on fever unexceptionable, or likely to fix an unalterable line of practice. The value of new theories ought not to rest on the characters of the theorists; their truth should be fully ascertained by attentive observations at the sick-bed; and the practice they recommend jealously tried by the test of experience.

In his introductory remarks, Dr. Armstrong notices the various significations which have been bestowed on the term Fever; and states his intention, in the treatise we are about to examine, to regard it in its most extended sense. Pyrexiæ, therefore, he considers as a class comprehending three orders: 1. those fevers which proceed from specific contagions; 2. those arising from marsh and similar miasmata; and 3. those depending on topical affections. This arrangement is certainly not free from objections. Classification, like definitions, should never be formed upon any disputable conclusions; and it must be allowed, that much obscurity often hangs over the origin of fevers which must necessarily be referred to the first and second of these orders. But of this fact our author appears to be fully aware; and he candidly admits, that it might have been as satisfactory to have classed fevers "rather by their phenomena, than by their known or supposed origin."

Dr. Armstrong confines the term *Typhus* to fever which "originates from a specific contagion," and has the power of producing a similar affection "in individuals exposed to its influence." He justly reprobates the opinion which considers it, in all its stages, "a disease of real debility;" and states his conviction, from extensive observation, that genuine typhus "is most certainly an affection of excitement, or of congestion, in its first stages, demanding at such times the decidedly evacuant plan." He enumerates three varieties of the disease; namely, *simple typhus*, in which the febrile excitement is completely developed without any decided marks of topical inflammation; *inflammatory typhus*, in which "symptoms of some visceral inflammation" are conjoined to the general febrile excitement; and *congestive typhus*, "distinguished by the hot stage not being at all, or only imperfectly, developed, and by simultaneous signs of congestion in one or more of the internal organs."

Simple typhus is characterized by three distinct stages, each of which are succinctly, but at the same time perspicuously, described by our author. The first, that of oppression, is stated to be generally insidious in its approaches, and occupying, "from first to last, a period of two or three days; when, after various irregular demonstrations of re-action, it is succeeded by the second stage, or that of excitement; in which there is a complete developement of the fever:" but this again, after holding "a tolerably even tenor" for six or seven days, attended with slight disturbance of the sensorium, considerable prostration of strength, and a changed state of the secretions and excretions, gradually gives place, in its turn, to the third stage, or that of collapse. The result of this stage is different, according to the nature of the attack. "In the mildest cases," says Dr. Armstrong, "it may be viewed as an indication of convalescence;" but in more marked cases "the supervention of the stage of collapse considerably augments the danger;" all the symptoms marking a state of extreme debility. Although dissections of fatal cases of this form of typhus often reveal the remains of irregular sanguiferous determinations to some of the viscera, yet our author observes, that, as far as his anatomical investigations can enable him to draw a conclusion, "there is hardly ever any *visible* disorganization." He, nevertheless, hints his suspicion that a fatal case of even simple typhus can scarcely occur without a degree of lesion in the structure of some vital organ; although our slender acquaintance with the natural organization of very delicate and complicated parts prevent us from satisfactorily detecting alterations in them, which, however apparently slight to the eye, may be of great importance for the due performance of their functions.

With regard to the degree of debility attending simple typhus, our author observes, that in the first stage it "is merely apparent," depending upon a preternatural accumulation of blood in the vessels of the internal viscera. In the second stage also it is still "only apparent, being then the consequence of over-excitement of the heart and arteries." But in the last stage it is indubitable.

On the opinions most generally received regarding the causes of the depression of the mental and voluntary powers, Dr. Armstrong observes,

> "Accordingly we find, that several celebrated theorists, differing widely on subordinate points, agree in assuming, that typhus is a disease in which the energy of the nervous system is directly impaired. But, doubtless, far too much stress has been laid on this assumption; which, it is to be feared, has done considerable harm, by leading to the stimulant treatment and by fixing the attention upon one train of symptoms, rather than directing it to a comprehensive view of the whole."—p. 18.

In this opinion every observing practitioner of considerable standing will concur; and, if he has candour, must lament the errors into which he was allured, in the early part of his career, by the Brunonian doctrines, which our author so aptly designates by the epithets "beautiful but deceptive." Instead of the nervous system suffering so much, Dr. Armstrong conceives that "if any system be more affected than another, it is unquestionably the sanguiferous." This is certainly a question of great difficulty, which we do not consider fairly solved by any thing he has advanced; and we cannot perceive how it can be decided, whether the nervous affection be the cause of the irregular action of the sanguiferous system, or "only secondary of vascular disorder?" It is a question, however, of little practical importance; and whatever may be the cause of the increased circulation in the second stage of simple typhus, we agree with our author that it is a state closely resembling that of inflammatory action, and requiring the strictest attention to prevent inflammation "supervening in a vital quarter." This indeed, as is correctly observed, may arise from simple irritation, which, "if neglected in its origin, may tend to produce, not only an increased afflux of blood, but an actual inflammation in some part."

Having shewn that typhus, although simple in its outset, may yet become connected with local inflammation, Dr. Armstrong next proceeds to examine that variety of the disease which he has termed *inflammatory typhus*. He dissents, however, from the opinion of Ploucquet, Clutterbuck, and others, that inflammation is an inseparable and essential constituent of typhus; and contends, that when that state occurs, it is to be regarded either as the consequence of cold, or the effect of the general increased excitement of the heart and arteries, acting on a part predisposed to inflammation; or, in other words, that it is "an effect, rather than a cause of fever." But he properly observes that it is less important to ascertain the mode in which it is produced in typhus, than "at what time it takes place, what character it assumes, and in what parts it is seated." These are very important points of investigation: let us, therefore, follow our author in his endeavours to elucidate them.

He conceives that two forms of inflammation, the acute and the sub-acute, may occur in typhus: and, although these are mere modifications of the same morbid state of vessels, yet the character and duration of the cases in which they occur are considerably varied, according as the one or the other is present. The period of their occurrence also differs.

> "The acute form generally arises on the first, second, or third day of the second stage, and being most active, is clearly denoted. Whereas, the sub-acute form usually arises after the third day of the second stage, and being less active, is at first obscure; so that the practitioner is for some time left to form his opinion, respecting its scite and extent, from uneasiness in particular regions, and coincident derangements in particular functions, rather than from violent pain, and other palpable symptoms, attendant on the acute form" —p. 25.

The symptoms of both these varieties of inflammation in typhoid cases are minutely and accurately detailed by our author; and we regret that, while the nature of the passages prevents their abridgment, their length does not admit of their being transferred in an entire form to our pages. When the brain is early and actively inflamed, the disease generally passes rapidly to a mortal issue; but sometimes it is protracted beyond the first week; and, when the inflammation is of the sub-acute kind, it may be continued from thirteen to twenty days, or even to a considerably longer period. According to Dr. Armstrong's researches, the kinds of the inflammation which have affected the brain, or its meninges, is scarcely pointed out by dissection. In both varieties,

> "The pia, or dura mater almost always exhibits marks of a previous increase of vascular action, with some coagulable lymph effused between them. Adhesions are often found in the convolutions and hemispheres of the brain; and the medullary part, on cutting, is covered with red points. The choroid plexus is generally turgid with blood; and the ventricles frequently contain more serous fluid than natural, especially in very young subjects."—p. 31.

When the inflammation affects the pleura, or the lungs, it is more frequently of the sub-acute than of the acute kind. The general symptoms resemble those of pleurisy, or peripneumony; "the tongue is commonly foul in the middle, and of a dark red round the edges;" both the temperature and the pulse vary; the latter being, in some cases, "slow, full, and strong; and, in other instances, quick, small, and weak." If the pulmonary inflammation be of the acute form, the fever, we are informed, generally terminates fatally within the first nine days. Dissection displays the pleura coated with coagulable lymph, serum effused into the chest, and often great congestion in the lungs, with "extravasation of lymph or of blood;" while, at the same time, these appearances are often accompanied "with some degree of congestion in the brain." The symptoms of this state are too marked to be overlooked: but when the thoracic inflammation is sub-acute, they are less likely to excite alarm, and are apt to betray the practitioner "into a false prognosis." We strongly recommend to our younger readers the attentive perusal of our author's admirable detail of symptoms of this form of inflammatory typhus. He accounts for the delirium particularly attendant on it, by supposing that the impeded transmission of the blood through the lungs tends to prevent "its free return by the veins from the brain:" but he also admits, that it may also "in part depend on those inexplicable sympathies which exist in the nervous system;" adding,

> "Certain it is, that I have met with some cases accompanied by

great intellectual derangement from the beginning, in which the minutest dissection after death could detect no vestige of cerebral disease, though in all an effusion of serous fluid was found in the pericardium, with some appearance of inflammation on its surface, and on that part of the pleura which covers the diaphragm."—p. 40.

Dr. Armstrong has met with four instances of typhus attended with chronic inflammation of the mucous membrane of the trachea. Two of these recovered; but in all the disease continued from two to three months.

The particular organ which is the seat of the increased or inflammatory action, when the abdominal cavity is affected in typhus, is extremely difficult to be ascertained, especially as regards the stomach, or the intestines. "Morbid dissections," says our author, "have fully satisfied me that the seat of pain is sometimes in the bowels, when the inflammation is confined to the stomach, and vice versa." But it is fortunate that the principles of the treatment are not affected by the accuracy of the diagnosis in this particular. When the liver is the inflamed part, the symptoms are less equivocal; unless the convex surface be the seat of the inflammation; when, as in ordinary hepatitis, the hepatic affection is apt to be mistaken for pleuritis. One remarkable circumstance, connected with this state, remarked by our author, is, that the skin "is very rarely jaundiced in the genuine typhus;" while on the contrary, in two fatal cases, which exhibited, among other strong symptoms of hepatitis, a bilious tinge of the skin, "on dissection no marks of inflammation were found in the liver."

Whatever organ may be the seat of inflammation in typhus, although it may readily be discovered in the first instance when acute, by a reference to the seat of pain, yet, the neighbouring parts are so soon and so extensively implicated, that the practitioner can do little more than express himself assured of the existence of the inflammatory action, without endeavouring to decide "where it has commenced or may terminate." When it is of the sub-acute form, the symptoms are so obscure, that it has sometimes existed without being suspected during the life of the patient, and has been discovered only by the unequivocal proofs of it displayed by dissection, when the cases have had a fatal termination. Two cases are detailed by Dr. Armstrong illustrative of this fact. The approach, however, of this variety of inflammation is in general denoted by "some slight feeling of pain, chilliness, great irritability of stomach, and an increased velocity of pulse." It is more apt to remain latent when the liver, spleen, kidneys, and peritoneum are the parts affected. The best test of the presence of abdominal inflammation, our author properly observes, is forcible pressure over the bowels, by which pain is often excited that would otherwise "scarcely be felt at all."

These forms of abdominal inflammation in typhus serve, in the opinion of our author, "to elucidate the pathology of dysentery," which he regards as an inflammatory affection, and which has, in his practice, "appeared never to propagate itself by an inherent principle of contagion." On the latter part of this remark, we would observe, that the contagious nature of dysentery is not likely to be frequently conspicuous in private practice; but we believe there is little reason for doubting that the disease is of a contagious nature. We fully accord with the remark, that the use of the lancet is too much dispensed with in the treatment of this disease. In a similar manner, puerperal fever is stated by Dr. Armstrong to bear "a close analogy to typhus complicated with inflammation of the abdomen." Erysipelas, in its complicated form, connected with interior inflammation, bears, in some of its features, a strong resemblance to typhus; but although the disease may be mistaken in the first instance, yet it is easily recognized when the cuticular affection makes its appearance. Typhus is also very frequently confounded with an inflammatory affection of the brain, connected with catarrhal fever; and it "is sometimes combined with acute rheumatism."

The whole of the observations of Dr. Armstrong on inflammatory typhus are extremely valuable; but their chief merit, certainly, consists in pointing out that variety of the inflammatory action attendant on contagious fever, which, in the language of Corvisart, he has termed the *sub-acute*; a form which has been altogether overlooked by preceding writers.

The last variety of typhus enumerated by our author, the *congestive*, although hinted at by Hippocrates, yet, has been little attended to by modern practitioners, with the exception of Dr. John Clarke and Dr. Robert Jackson, the latter of whom, Dr. Armstrong observes, has "the merit of having surpassed his predecessors in explaining its nature." The observations, however, on this form of fever are the substance of our author's own experience. After detailing four interesting cases of the disease, the mode of its attack is thus described:

> "The attacks of the most dangerous forms of the congestive typhus are generally sudden. and marked by an overpowering lassitude; feebleness of the lower limbs; deep pain, giddiness, or sense of weight in the encephalon; a dingy pallidness of the face; anxious breathing; damp relaxed, or dry withered skin; and those peculiar conditions of the temperature which have been noticed above. The pulse is low, struggling, and variable; the stomach irritable; frequently there is an inability from the first to hold up the head; and the mind is more often affected with dullness, apprehension, or confusion, than with delirium. The whole appearance

of the sick impresses the attentive practitioner with the idea, that the system in general, and the brain in particular, are oppressed by some extraordinary load. Both the manner and look of the patients undergo early and great alterations: sometimes they slowly drawl out their words, or utter them in a hasty and yet imperfect mode, like people who slightly stammer when embarrassed; they not unfrequently seem as if stunned by a blow, half-drunk, or lost in a reverie; and at times have the bewildered aspect of persons suffering under the first shock of an overwhelming misfortune. The eye is occasionally glary and vacant, without redness; but at other times it is heavy, watery, and streaked with blood, as if from intoxication, or want of sleep. At the commencement, the pulse is often less altered as to frequency than might reasonably be expected, yet in general it becomes very rapid towards the close; the tongue is usually little altered in the first stage, but in the last it is frequently rough, foul, and brown; the bowels are mostly very torpid in the beginning, and the stools procured dark and scanty; whereas, in the advanced stage, the bowels are generally loose, and the stools copious and involuntary. Petechiæ in general appear earlier in these than in any other varieties of typhus; and in the last stage there are sometimes gangrenous spots on the extremities, oozings of blood from the mouth and nostrils, and hemorrhage from the bowels."—pp. 68.

In forming a prognosis, if the stupor, delirium, and oppression increase, the respiration become more anxious, and the skin colder, while the pulse is weaker and quicker, and other symptoms of great debility shew themselves, a fatal issue may be anticipated; and a favourable one if the reverse be the case. But at all times a cautious prognosis should be delivered; for, as our author adds, "in the severer modifications of congestive fever," from the great disposition to relapse, "the patient is not always perfectly safe until he is perfectly recovered." Several modifications of the congestive are next described, all of which may be recognized

> "by the depressed state of the pulse and circulation; the uneasiness of the head; the anxiety of the præcordia; the peculiar condition of the skin; the total want of excitement, or its partial and unequal developement; the suspended or vitiated secretions; and the local load, and general oppression."—p. 75.

Congestive typhus differs from simple typhus chiefly in the absence of that state of re-action which characterises the second stage of the latter, by the greater engorgement of the viscera in the first stage of the attack, and by its being immediately followed by a general collapse. From inflammatory typhus it is still more readily distinguished; although, as Dr. Armstrong observes,

> "the inflammatory and congestive typhus may sometimes pass into each other by imperceptible gradations, the congestive leading to the inflammatory in some instances, and the inflammatory to the congestive in others."—p. 77.

Dr. Armstrong notices two sub-varieties of congestive typhus, which he denominates regular and irregular: in the regular, "the topical accumulations of blood are so great, as wholly to overpower the resistance of the arterial system;" whereas, in the irregular, there is some slight effort at re-action; like an effort of Nature "to restore the natural balance of the circulation."

Such is an imperfect sketch of the varieties under which our author considers typhus ought to be regarded; and if the accuracy of the distinctions which he has pointed out be admitted, the importance of an attentive consideration of them for regulating the treatment of contagious fevers must be sufficiently obvious; and it must be allowed, he is justly entitled to any tribute of praise which, the accurately marking of their characteristics, by which they may be readily and always recognised, merits.

Dr. Armstrong next proceeds to examine the analogy between the plague and typhus; and, as a kind of text, quotes the definitions of that disease, as it has been divided into three distinct species by Sir Brooke Falkner*. The first species, which he conceives has a close analogy with congestive typhus, is marked "by the want of regular and universal re-action, and is connected with visceral congestion:" the second, which resembles inflammatory typhus, is indicated "by general symptoms of excessive excitement:" and the third, he regards as even a milder disease than "the least complicated form of typhus; although it sometimes verges upon, and even passes into, the inflammatory species." Dissection has also demonstrated, that the internal organs in plague are affected with inflammation and congestion; and, adds our author, a sufficient number of morbid dissections have not yet been made, to permit me to accord with Dr. Pearson in regarding it as a general fact, "that the visceral inflammations in the plague are unaccompanied by an exudation of coagulable lymph." He very properly criticises also the unfounded opinion of Dr. Pearson, that the inflammation in plague differs in other respects from simple inflammation, and justly reprobates the epithet *pestilential*, applied by that learned physician to this assumed species of inflammation; contending, that if such terms were once sanctioned in medical literature, every fever would have its specific inflammation, which, according to the nature of the fever, might be named "typhoid, rubeolous, remittent, and the like." That the danger of plague depends upon visceral inflammation and congestion, and not upon debility, he next endeavours to prove, by quoting the beneficial effects of the depletory system as practised by Oribasius, and even the Modern Asiatic physicians, and advised by Sydenham and Mead; a practice which ought never to have been superseded by that founded on the modern doctrines of debility; which doctrines, our author emphatically observes, "have paralized the arm of many European practitioners."

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* Vide *Edin. Med. and Surg. Journal*, vol. x. p. 147.

In discussing the treatment of typhus, Dr. Armstrong adopts the same arrangement, explaining the cure of its simple inflammatory, and congestive varieties in succession.

In the early state of *simple typhus*, he regards the benefit obtained from antimonial emetics to depend chiefly on their determining to the surface, "and changing the morbid actions [balance] of the circulation;" and he recommends, immediately after their operation, the emptying the lower intestines "by a large cathartic injection," which tends to allay the irritability of the stomach, and permit the after-exhibition of aperients by the mouth; the free employment of which, he justly remarks, "instead of weakening the patient, will renovate his powers." The warm bath he regards as a safe and efficacious remedy, in conjunction with tepid diluents, as barley water and thin gruel, which should form the only diet and beverage, except in old or debilitated habits, where, with the means already detailed, "small portions of weak wine may be requisite before the second stage takes place;" but in general he condemns diffusible stimulants, from the tendency they have "to convert a simple into an inflammatory typhus." The temperature of the apartment shou'd not be below 56° of Farenheit's scale.

In the second stage of simple typhus, our author advances his testimony in favour of the beneficial effects of the cold affusion, under the *restrictions* pointed out by Dr. James Currie:

> "During the first, second, and third day of the stage of excitement, more especially during the first, I have sometimes seen the simple typhus entirely extinguished, by the affusions of cold water, and failing to effect so much, they have generally been highly refreshing to patients, and, with other measures afterwards to be noticed, have enabled me so to lessen the fever, as to insure a favourable issue. But from the fourth day of this stage, I have not often seen them useful; and from that time onward, until the period of collapse, it has been customary with me to employ the tepid affusions or bath, at the temperature of 94° or 96° of Farenheit's scale."—p. 105.

He repeats the affusion four or five times in twenty-four hours, using each time about two gallons of sea water, or spring water impregnated with common salt, the feet of the patients being placed in warm water; and when they are dried and put to bed, he advises the moderate use of tepid, bland fluids, to assist in promoting gentle perspiration. With the tepid affusion he judiciously advises the addition of a small portion of ardent spirit to the water, to increase the evaporative process, on which its efficacy depends; which, we agree with him, is preferable to vinegar, the usual substitute on such occasions; but we can scarcely forbear smiling at the reason he assigns for this preference:

> "It is rather objectionable, because it very often contains a quantity of mucilaginous matter, which being spread over the skin, by the affusion, prevents the cooling process from taking place so readily, as when water merely, or when water and spirits are used, and which also, interrupting the perspiration afterwards, causes a more rapid accumulation of the febrile heat."—p. 106.

This is a degree of finical refinement which we did not look for from Dr. Armstrong. As to the modus operandi of cold and tepid affusions, he conceives that, "whatever may be their immediate influence on the temperature and nervous system, the permanently good effects are to be attributed to the changes which they induce in the circulation;" an opinion regarding which, we may venture to assert, there is a general sentiment of accordance among the thinking part of the profession.

Purgatives are properly ranked next in efficacy to the cold and tepid affusions in this stage of typhus; and our author modestly advances it as a query, whether the benefit thus produced does not rather depend on "their restoring healthy secretion, and removing irregular distributions of blood from the head, liver, and other vital parts;" than from the mechanical dislodgement of feces. Another benefit stated to arise from the employment of purgatives, is, that they prevent either complete or partial suppression of urine; events not unfreqnently attending an increase of the pyrexial symptoms.

The observations on the regimen suitable in this stage are excellent; and Dr. Armstrong's experience tends to refute the popular prejudice against the use of milk in fevers; a prejudice which, notwithstanding the favourable opinions of Sydenham and Heberden, still influences even some practitioners.

With regard to the treatment of the third stage, our author observes, that evacuations ought to be avoided, except when, from the neglect of purgatives in the earlier ages, cerebral oppression supervenes as secondary of loaded bowels; in which case calomel, jalap, and stimulating enemata are indicated, the strength being at the same time supported by "moderate allowances of good wine." A similar practice is also necessary when the stools are frequent, small, loose, fœtid, and occasionally mixed with blood and slime. Purgatives are contraindicated when petechiæ shew themselves; and, instead of them, lemon juice, madeira wine and water, opium, and aromatics, should be given. Reasoning on the cause of death in this state of the disease, Dr. Armstrong supposes that it may arise from some change in the blood, rendering it "unfit for the purposes of vitality," and suggests the trial of some of the exhilarating gases. We cannot *à priori* see that much benefit could arise from such a practice; nor does it appear by any means clear to us, that the proper state of the blood, allowing that a change has occurred, is likely to be restored by the admixture of any gas. Our opinion is, that petechiæ in the last stage of typhus arise from a disposition to a general solution of continuity in every part of the body; and as owing to the diminished vis a tergo, the blood partially accumulates in the extreme vessels, these give way in the weaker parts and pour out their contents.

The following remarks on the specific effects of different kinds of purgatives requisite in the different stages of typhus, are extracted for the benefit of our junior readers:

> "Calomel has probably a more general influence than any other cathartic; it excites a degree of nausea in the stomach, emulges the biliary ducts, dislodges scybalæ most effectually, corrects morbid secretions, and, with small doses of the antimonial powder, or of the tartrite of antimony, promotes perspiration as well as purges; and this combination, therefore, is well suited to the stage of excitement. Castor oil, in one respect, resembles calomel, for it completely unloads the alimentary canal of its contents; besides, it tends to allay tormina or tenesmus, and every species of irritation about the rectum. Jalap and rhubarb seem chiefly to exert their power on the larger intestines, and when conjoined with calomel are very certain in their operation, and when given after it, especially rhubarb, have a tendency to remove the tenesmus and the mucous discharges, which it frequently produces exhibited alone. The neutral salts, such as the sulphate of magnesia, have a peculiar effect on the inner coat of the bowels, evinced by copious liquid stools; yet they are not to be trusted to singly, because they may, though given day after day, leave a considerable quantity of scybalæ in the arch of the colon. Magnesia often allays irritability of the stomach, particularly when accompanied with bilious or sour watery vomitings; it may therefore be advantageously combined, in many cases, with other aperients, and when followed by lemon juice, is frequently a certain and powerful purgative. Aloes, and similar drugs have most influence on the lower part of the intestines, particularly when prescribed in the form of a pill. From these hints it will be apparent, that calomel, antimony, jalap, rhubarb, and the like, with occasional neutral salts, are most proper in the first and second stage, and that, with some exceptions already mentioned, aloes and the mildest laxatives are most proper for the last stage of the simple typhus."—pp. 121-3.

Some very judicious cautions are given regarding the employment of the cold or tepid affusions in the last stage of simple typhus; instead of which, partial ablutions, small draughts of cool liquids, and the admission of cool air, are recommended when the heat of the surface rises much above the natural standard. With regard to the use of wine, although our author conceives that a moderate allowance of diluted wine is necessary, yet he wisely condemns the free employment of strong stimulants. No direct rule can be fixed as to quantity; but he mentions that about two-thirds of a pint of Madeira may be stated as the proper portion for an adult in twenty-four hours; and he often mixes this "with four or five parts of milk." In convalescence, still more caution is requisite in the use of diffusible stimuli. As to diet, he advises that one or two simple articles should be chosen and adhered to; and that they should be given frequently, but in small quantity at a time.

In convalescence, secondary fever may arise from the too free use of stimuli or other imprudencies. The necessity of determining the nature of this, is properly insisted upon: when it is an affection of simple excitement, the antiphlogistic regimen and purging will remove it; but if it be conjoined with visceral inflammation, venesection and blistering are requisite. Our author concludes this part of his subject with the following important remarks:

> "It is finally to be observed respecting the treatment of the simple typhus, that much may be safely attempted in the first and second stages, and the practitioner is highly culpable who neglects to avail himself of every favorable occasion which they offer. But in the last stage, particularly of severe cases, it is dangerous to attempt a great deal; and the *nimia diligentia,* the extreme officiousness which leads to a variety of prescription, must be studiously avoided, since the time for demonstrating the decided efficacy of medicine is unfortunately past; and perfect quietness, ventilation, cleanliness, regular supplies of proper cordials and food, with occasional opiates to allay irritation, will often do more towards restoration than all the boasted specifics in the world. In short, we should, in some degree, imitate the practice of Asclepiades, who, as Celsus informs us, allowed his patients little respite in the beginning of fevers, but administered even to their luxuries in the advanced stages."—p. 130.

Dr. Armstrong next enters upon the consideration of the treatment of *Inflammatory Typhus;* and, after some general observations, proceeds to point out when venesection, the most important remedy in this variety, "is proper, and when improper."

It is in the beginning only of acute inflammation as connected with typhus that general blood-letting is requisite; but when it has existed for a few days, our author observes, "venesection will hardly ever remove," but will hasten the fatal issue "by its powerful impression on the whole system." In such a case, topical bleeding, in conjunction with purgatives and blisters, should be preferred; and it is properly remarked, that there are circumstances which "justify the simultaneous employment of local blood-letting and diffusible stimuli;" as when the head or chest is gorged with blood, or the approach of the stage of collapse. Under all the circumstances, however, which can occur in typhus, neither general nor local bleeding can be carried to the same extent as in cases of simple acute inflammation; and as our author states, it should always be kept in view, that "in all fevers of an open character" there are "two grand stages, one of excitement, and another of collapse;" and, according to the presence or absence of which, the use of the lancet must be regulated. Notwithstanding this precaution however, Dr. Armstrong recommends that when the presence of acute inflammation in typhus requires blood-letting, it should be carried ad deliquium; but as this ought to be done at the least expence of blood, the patient should be bled "standing, properly supported, erect upon the feet," and from a large orifice; or if there be obstacles to this, after five or six ounces have flowed, he should be placed on the breech, "with the trunk perfectly erect." The quantity to be abstracted in these methods, need scarcely ever exceed "ten, twelve, fourteen, or sixteen ounces." The largest quantity ever ordered to be drawn in inflammatory typhus, by our author, we are told, "amounted in all to about fifty-four ounces." The patient was robust, and the case was attended from the commencement with pleuritis. When the head is particularly affected, the blood may be drawn from the temporal artery. As to the jugular vein, our author conceives no benefit can result unless the internal jugular be opened.

As the remedy next in power to depletion, and to be employed after blood-letting and opening the bowels, for equalizing the circulation, Dr. Armstrong recommends *calomel*, which he conceives has a direct power to produce this effect. He gives it in doses of from eight grains to a scruple, combined with a grain of opium, "and repeated three, four, or five times in twenty-four hours, until the mouth be obviously affected."

> "It will be found," says he, "that few patients perish in inflammatory diseases where ptyalism is clearly established."—p. 142.

With regard to the cold affusion in acute inflammatory typhus, Dr. Armstrong observes, "my experience does not enable me to speak with perfect confidence;" and he considers that it still remains to be more fully ascertained "in what modifications of inflammatory affections the cold affusions ought to be used, in what rejected."

When the inflammation is of the sub-acute kind, our author does not carry the depleting plan to the extent already noticed; but recommends any attack upon particular parts to be warded off by local blood-letting, "blisters, purgatives, or similar means." If the brain be the affected part, he prefers opening the temporal artery to the application of leeches. When hepatic, gastric, and abdominal inflammations of the sub-acute form occur, as the stomach is generally too irritable to retain purgatives given by the mouth, the lower intestines are advised first to be cleared "by large and repeated injections containing at least a quart;" and, afterwards, full doses of purgatives exhibited "to act upon the whole course of the canal." These, our author remarks, not only remove excrementitious matters, but, by exciting some evacuation of serum from the inflamed part, produce all the advantages of local blood-letting. Calomel is the purgative he prefers; and after exhibiting it in one or two large doses in the day, followed by some other active cathartic, he continues its use in smaller doses combined with opium during the night. The dose of calomel and opium should be varied according to circumstances; but the general dose prescribed by Dr. Armstrong, is that which we have already noticed. With regard to the exhibition of opium he observes:

> "When opium is given expressly to diminish irritation, the first dose should be tolerably large, say two or three grains; and the subsequent ones of course much smaller. But it must be constantly remembered, that opium ought not to be exhibited in visceral inflammations, until an impression has been made by free evacuations; except indeed where there is excessive pain, and then it may often be used with advantage, in conjunction with venesection. In some inflammatory affections of the abdomen, attended with spasm of the intestines, or with unusual irritation, I have occasionally found it impossible to move the bowels, without the previous exhibition of opium. In such cases, about 120 drops of the tincture will often do very well, made with two ounces of mucilage into an enema which should not exceed that measure, else it will not remain long enough to produce a proper effect."—p. 160.

Often after local inflammation is subdued in typhus, a secondary fever of irritation supervenes, in which, "if opportunely employed, the warm bath, active purgatives, and small repeated opiates are often remedies of great power." In this state also, warm affusions may be occasionally applied; milk and light animal broths form the best general diet; and cool air should be liberally admitted to the patient.

Before passing to the consideration of the treatment of congestive typhus, Dr. Armstrong notices some other affections, the treatment of which he considers ought to be chiefly regulated "by the principles which have been laid down for inflammatory typhus." These are, dysentery, erysipelas, and visceral inflammations. *Dysentery*, our author regards as always attended with acute or sub-acute inflammation of the villous coat of the intestines, and connected with deranged functions of the liver and skin. *Erysipelas*, he considers in all its forms a sthenic disease in the commencement, becoming asthenic only in the last stage, in which an universal collapse occurs, "as the mere produce of preceding excitement or congestion." He makes some excellent observations on infantile erysipelas; in which his mode of treatment is the same as is now generally adopted by the most judicious practitioners, except that we believe few will be disposed to push the abstraction of blood so far as he recommends. In simple visceral inflammation, he condemns frequent bleedings, which exhaust the patient without producing any efficient benefit, whereas one copious bleeding in the commencement, capable of producing syncope, will often arrest the inflammatory action, and the strength of the patient "be proportionably saved." The largest quantity he ever took away at once was forty ounces; but by placing the patients on their feet, as we have already noticed, he has generally succeeded in inducing syncope before half that quantity was abstracted, and it is by the production of this effect, that he conceives the benefit is obtained. A highly interesting case of sub-acute visceral inflammation is detailed, in which the value of the proper employment of the lancet, and the exhibition of calomel and opium are admirably illustrated. Indeed the whole of our author's remarks on these diseases are very valuable, and form a fine model, by which a young practitioner may regulate his practice in acute diseases.

Dr. Armstrong next adverts to acute rheumatism, ophthalmia, tic doloureux, and periodical head-aches, as diseases requiring the depletory practice. In the first of these diseases, he abstracts blood to the amount of from ten to twenty ounces in the commencement, then purges the patients briskly for two days, and afterwards saturates their habits with calomel combined with antimony and opium, keeping the mouth tender for ten or twelve days, by which time he asserts the cure is generally completed. We regret that our experience does not allow us to accord with our author's remarks on this subject; and we believe there are few practitioners who have not felt their confidence in mercurials, exhibited otherwise than as purgatives, in acute rheumatism, shaken by many disappointments. In a recent case under our care, and after bleeding and purging the patient, calomel, antimony, and opium were exhibited so as to produce severe ptyalism, which continued for fifteen days; but although the pains were apparently abated during its continuance, yet, they returned almost immediately after its effects ceased. In ophthalmia, he pushes depletion to its utmost extent, following the bleeding by blistering, local bleedings with leeches, and purgatives; but he regards lotions as generally useless, diappointing the practitioners both in acute inflammation of the eye, and after operations on that organ. Tic doloureux he considers a complaint of the brain, to which the affection of the face is merely secondary; and, consequently, he recommends the depleting plan, as in other acute inflammatory affections: but he candidly admits, that this plan does not succeed in chronic attacks of some years standing, in which, after a moderate bleeding, an alterative course, or small and repeated doses of arsenic, afford the fairest chance of relief. He notices a variety of tic doloureux, in which the pain "is seated in one of the fingers, and most frequently under the nail;" but in which other symptoms also indicate an affection of the brain. In this form of attack local applications are of no use; but the depletory system is productive of the best effects.

Having so often mentioned the beneficial effects of calomel and opium in acute inflammatory diseases, our author thinks it necessary to state, that this practice, at least in England, originated with Dr. Robert Hamilton of Lynn Regis, who published the results of his experience in Duncan's Medical Commentaries, for the years 1783-4. Dr. Hamilton, having learnt from a Naval Surgeon that acute hepatitis was cured in India by mercury, after a bleeding and the exhibition of a purgative, tried the practice; and finding it succeed, extended it to other inflammatory affections, combining opium with it to allay pain. Our author conceives that Dr. Hamilton's practice was defective, inasmuch as the lancet was too sparingly used, and the doses of calomel "were either too small, or too frequently repeated." Dr. Armstrong seems to conceive that the extension of the practice to congestive typhus, and other diseases of a similar character, is exclusively his own; let us therefore, now examine his plan of treatment in this variety of typhoid fever.

From what has already been noticed, our readers are aware that our author denominates that from of typhus, *congestive*, in which "there is no immediate stage of re-action;" and consequently comprehends under it the low malignant, contagious fever of this country. The debility in this disease he regards as at first rather apparent than real, and to be treated accordingly by early bleeding, purging, blisters, and the warm bath. The attack of the disease is sudden;

"and what magical change," remarks our author, "it may be asked, has been wrought in the system in the period of a few hours, that the subject, who the moment before his sickening might have been largely bled without the least prejudice, should now, that he is actually indisposed, be all at once pronounced incapable of bearing the smallest abstraction of blood? To permit ourselves to be influenced by preconceived theories and puerile fears, on such emergencies, is in effect to conjure up ideal phantoms which paralize our energies, when they are most urgently required. Abstract but the idea of contagion from cases of this nature, and we should be prepared to treat them boldly, as we would any other alarming disease of congestion, from the mere impression of the prominent symptoms. And why in our maturer deliberations should the assurance, that the morbid phenomena have proceeded from contagion, prevent us from using the remedies which for similar symptoms, arising from a different cause, we should not hesitate an instant to employ? In a rational practice, it is not surely necessary always to form our indications of cure from the consideration of the *primary cause* of any disorder; in general, it is only to the effects produced on the various parts of the system that our remedial agents ought to be applied; and wherever the effects are nearly or precisely similar in two acute diseases. it may be held as an axiom, that the principles of treatment ought also to be nearly or precisely similar; though the one originated in cold, and the other in contagion, or in any other opposite causes".—p. 227.

It is in the first stage of congestive typhus, however, that blood-letting is admissible; and the quantity must be regulated by the effects produced, eight or ten ounces being in some cases sufficient, while, in others, twenty or more are requisite to relieve the engorgements. Sometimes the blood will hardly flow from the veins, in which particular, if the head be affected, the temporal artery should be opened. When the pulse continues after the bleedings oppressed, the warm bath and frictions with warm spirits or oil are advised; and, instead of simple diluents, "a little wine with warm water should be occasionally exhibited;" for if the functions of the skin can be restored, recovery generally succeeds. These means are to be promptly followed by purgings, particularly with calomel, which our author pushes so as to affect the mouth. But although Dr. Armstrong conceives it dangerous to trust the cure of congestive typhus to diffusible stimuli, yet he admits that their use is often requisite after depletion to restore the due balance of the circulation.

When blood is drawn, even on the second day of the attack in congestive typhus, it is often found to have already suffered a change; it is black, dissolved, and does not coagulate; under which state depletion is of course hurtful; while diffusible stimuli, calomel and opium, blisters and free ventilation, are the means to be relied upon. Even in the milder cases of this form of fever, when any indications of general collapse occur.

"be they ever so slight, evacuants of all sorts should be suspended." The cold affusion is not admissible in any state of congestive typhus; but the warm bath is particularly so, as it tends to restore the balance of circulation between the central parts and the skin.

Our author notices a disease to which infants are liable, which closely resembles congestive typhus. The lungs are the organs chiefly affected, and when examined after death are found gorged with blood; and unless relieved, the attack proves fatal in thirty-six hours. Bleeding, blisters, the warm bath, and purging, are the means of treatment recommended. He also mentions a form of *Urticaria*, in which, symptoms of congestion occur, and which he has seen instantly relieved by emetics; the propriety of the use of which in congestive typhus, he considers a question of much importance, which is yet to be decided. He next examines the resemblance of *Apoplexy* to congestive typhus, and divides that disease into acute and chronic. When the first arises in a spare lax habit of body from cold or visceral obstructions, it requires the remedies recommended in congestive typhus; but when from an increase of arterial excitement and too much blood sent to the cerebral arteries, then depletion must be carried much further "than in the congestive apoplexy." In both, after the first shocks are repelled, he advises a mercurial course pushed to ptyalism. Chronic apoplexy is that form of the disease which has been generally termed serous, "which, however," Dr. Armstrong observes, "requires a depletory and alterative treatment."

Some excellent observations on *Mania* follow those of apoplexy; and our author particularly notices the hepatic derangements with which it is often connected; conceiving the state of the brain, in every instance, to be secondary of a "primary disorder in the circulation." However rational these opinions may be, we confess it appears to us a question of the greatest difficulty, to ascertain whether the affection of the brain be primary or secondary; and it is likely to remain undetermined, unless chance should enable the point to be settled by dissection at a very early period of the attack. Whatever may be the truth in this point, the cerebral affection is present in every case of mania; the brain in no instance, as our author remarks, being found "perfectly natural on minute examination." In his practice, Dr. Armstrong employs bleeding, purging, blistering, and mercurials; and observes, "hardly any of the patients shewed signs of convalescence until the mouth had been some time affected by mercury, and until some degree of emaciation took place." The other remarks on the treatment of this disease are highly interesting. Our author closes his volume with the history and treatment of a febrile affection very close resembling mania, which is produced by excessive drinking; and with some general observations on febrile diseases.

We cannot too strongly convey our thanks to Dr. Armstrong for the valuable addition he has made to the pathology of fever, by this work. To himself, as the artist, it is highly creditable. The lucid display of his subject, in the best possible point of light, and the touches of truth which are conspicuous throughout the picture, display the hand of the master. The style of the volume is perspicuous, and the language as correct and polished as the subject requires. To assert that it is utterly free from imperfections, would be a contradiction of the remarks we have made on several passages in the course of our analysis; but we do not hesitate to affirm, that we have perused few treatises in which Philosophy and Medical Science have so successfully combined their powers.

II.

Essays on Hypochondriacal and other Nervous Affections. By JOHN REID, M.D. Member of the Royal College of Physicians, and late Physician to the Finsbury Dispensary. 8vo. pp. 272. London, 1816. Longman and Co.

THE ingenious author of these elegant Essays has, with more modesty perhaps than judgment, given his varied observations, the result of long experience, in this miscellaneous form. He certainly thus avoids trouble, and renders his book, by treating the subjects on which he comments familiarly, more acceptable to the general class of readers. But when we contemplate the importance of those subjects, and how much the happiness of society is interested in them, we cannot but lament that they are so scantily discussed: and this regret is the more augmented, since we know no one more capable than the writer to have amplified on each with the fullest effect.

These lucubrations of Dr. Reid are, some purely ethical, others medical, but none really practical. Indeed those which appertain at all to the medical art, must rather be termed prophylactical than therapeutical. Not that their merit is less on that account; for we are convinced, that were admonitions for the preservation of health and the prevention of disease enforced with energy and ability, the result would be extensively useful; and if writers, so gifted as our author, were to exert their powers in this too much neglected department, the effect on those who read would be irresistible.

The first and second Essays have a necessary connection, and mutually illustrate each other; the one being a general disquisition on "*the Influence which the Mind has on the Body;*" and the other, an application of that principle "*on the Power of Volition.*"

Metaphysical as these subjects may seem to be, the introduction of them into a treatise on nervous affections was indispensable, by an author who considers that the treatment of mental disorders can only be acquired by a study of the mutual relation between the will of man and his feelings. In the Essay on Volition are some excellent remarks on the cruelty of treating hypochondriacal patients with levity and ridicule, as if they had it in their own power to shake off the malady with which they are afflicted. Still it is properly admitted, that a person often indolently bends under the burden of indisposition, which a spirited effort would in the first instance have removed, and on that account it is strongly recommended that those labouring under this distressing evil should be stimulated to gradual exertion of their mental and bodily faculties.

The Essay "*on the Fear of Death,*" exhibits a melancholy portrait of human imbecility, which the author has touched with great judgment and feeling for the purpose of guarding the timorous against the pernicious effects of despondency, and of shewing, as he justly observes, that "in dangerous maladies, the person in whom there is the least fear of dying, has, other circumstances being the same, the fairest chance to live."

> "I am no advocate," says Dr. Reid, "for imposing wantonly or unnecessarily upon the understanding of an invalid, under the pretence of remedying his distemper. Deception is liable to discovery, and when once detected, a man forfeits his future right to credit and authority. By giving hope where it turns out that there was no ground for it, we deprive ourselves of the power, for ever after, of inspiring confidence in those cases where even we have ourselves no suspicion of danger. But by terrifying the imagination, to *create* danger, where none had previously existed; by some treacherous logic to reason a man into an illness; or when a trifling ailment is present, to aggravate it into a serious malady, by representing it as already such, is amongst the basest and the blackest arts of empirical imposture."—p. 28.

In a disquisition "*on Pride,*" as a source of mental derangement, it is well observed, that

> "praise, unjustly or too liberally administered, acts as poison upon a puny intellect. A man even of a vigorous mind is liable to receive injury from applause, although it be well deserved. Extraordinary merit is often spoiled by its natural and most appropriate reward. The smoke of the incense is apt to obscure and pollute the idol of our worship."—p. 34.

The essay "*on Remorse*" contains some good rules for the regulation of the mind when it is apt to be affected too deeply by the consciousness of some real or imaginary dereliction of duty. This is a subject which would have borne expansion; and we should be glad to see it more copiously illustrated and minutely discussed by our author.

On "*Solitude*," which is treated in the next essay, we meet with many sound observations, well adapted to prove serviceable to those who are of a melancholic temperament. The author thinks, and in this he is supported by the opinion of Dr. Johnson, that a man runs less hazard of sinking into an hypochondriacal state in London than in the country.

> " To one who has principally resided in the middle of a great city, an entire and permanent removal from it is a doubtful and somewhat dangerous experiment. The shades of solitude, it is to be feared, may prove too dark for him who has been long used to the sunshine of society."—p. 56.

After relating an example of this in a man who retired from an eminent situation in the metropolis into the country, and fell into a state of sottish melancholy, he continues:

> " Although habits of seclusion should be in general avoided by the hypochondriacal, it ought also to be remembered, that there is a kind of society which may prove more injurious even than solitude to his bodily and intellectual health. We are not perhaps sufficiently aware that nervous complaints are, through the medium of sympathy, scarcely less infectious than febrile diseases. Amongst many other instances illustrative of this opinion, I particularly recollect the case of an amiable young woman, who, although she had been before remarkable for the uniform cheerfulness and gaiety of her temper, became decidedly, and often deplorably, dejected, in consequence of having for a length of time been domesticated with an elderly friend who was of a desponding and melancholy cast. The contiguous atmosphere of an hypochondriacal, like that of a typhous patient, may, in a certain sense, be said to be impregnated with contagion."—p. 58.

In a very ingenious essay, the author treats the consequences of "*Excessive Study*" in a masterly manner.

> " Although," he says, "intemperate study be not one of those modes of excess, against which it is peculiarly necessary to guard the youth of the present generation, there is no one, I am convinced, from which more mischievous and dreadful consequences have sometimes originated. Too often talents have been sacrificed to acquisitions, and knowledge purchased at the expence of understanding. Literary gluttons may not unfrequently be met with, who, intent only upon feeding a voracious appetite for books, accumulate gradually a mass of indigested matter, which oppresses, and, in time, destroys altogether the power of intellectual assimilation. The learning of such men lies a dead weight upon the mind, and,

instead of enriching its substance, or adding to its vigour, serves only to obstruct the freedom, or to impede the activity of its operations. The mental enlargement which is thus produced, may be compared, not to that natural and healthy growth which is attended by a proportionate increase of strength, but rather to the distension of tympanites, or to the morbid dilatation of a dropsy. What is called a learned man, is often a lazy man in disguise, with whom reading is a refuge from the more strenuous task of reflection. A reformation has taken place with regard to literature as well as religion. With the more rational part of mankind, wisdom is no longer thought to consist in poring over books, any more than counting beads is now regarded as devotion."—pp. 61-3.

The essay on "*Vicissitude, as a Cause and Characteristic Symptom of Intellectual Malady*," has the same merit as the preceding; but it is also too short. That on "*Want of Sleep*" is introduced by observations, which, if duly attended to, would often avert insanity.

> "Obstinate vigilance is not only one of the most uniform symptoms, but also very generally precedes, and, in a few instances, may even itself provoke an attack of mental derangement. It is rather, I am aware, to the agitating passion or the corroding anxiety, by which the want of sleep is most frequently occasioned, that we ought in many cases to ascribe the insanity which ensues. But even when watchfulness cannot be regarded as the only agent in inducing the disease, it assists, and in no small degree aggravates the operation of the other causes. That this should be the case, it will not be difficult to shew, from circumstances obviously attending the state of sleep.
>
> "The variety and rapid succession of ideas so remarkable in dreams, cannot but tend to counteract in some measure that habit of unvaried thought, which, when it occurs, has been too generally found the melancholy prelude to insanity."—p. 74.

The author subjoins, that,

> "I have been often solicited to recommended a remedy for wakefulness or broken and untranquil sleep by hypochondriac patients who had previously tried all the medicinal, or dietetic opiates, as well as other methods for producing the same effect, without obtaining the object of their wishes. I in these cases advised the use of the cold or the warm bath, and generally with decided advantage."—p. 77.

The tenth essay dwells most forcibly and judiciously "on *Intemperance*." We select the following pointed passage:

> "Men, who from an equivocal felicity of constitution are prevented for a long time from killing themselves by their excesses, are often the indirect means of destroying many of their fellow creatures. Such persons are referred to as living arguments, much stronger than any inanimate logic to the contrary, of the innocuous nature of intemperance. In their countenances we may sometimes read the indications of almost invulnerable health; it would be well

if also were inscribed there, in characters equally legible, the catalogue of convivial companions who have fallen victims to their treacherous example."—p. 97.

The author thus introduces some remarks, on the use and abuse of opium—

> "Inebriety is not properly confined to the use of fermented liquors. The tipplers of laudanum are sots, although of another sort."—p. 103.

The essay "*on the Morbid Affections of the Organs of Sense,*" offers a few hints on diseases of the eyes arising from mental influence, or disorders of the general health. A short disquisition follows, in which the vulgar error is confuted, that madness arises from the excess of intellectual vigour.

We have next an inquiry into the "*Connection between Physical and Mental Malady.*' Dr. Reid here very judiciously observes, that "by being so much in the habit of observing the influence of physical causes upon the mental powers and feelings, the practitioners in medicine are particularly in danger of leaning towards the doctrine of materialism." With this opinion we perfectly accord; but it is not the only danger to which medical men are exposed, by indulging in visionary and speculative inquiries, which neither elucidate the mystery of the operation of mind upon matter, nor advance them one jot in the more useful knowledge of those sciences, which constitute the true objects of their studies. Our author thus concludes this section:

> "A peremptory positiveness of opinion, as well as a rashness of action, is natural to the ardour and inexperience of youth; but diffidence gradually grows upon declining life. Unlimited dogmatism, in almost every case, affords suspicion of very limited information. In the degree in which our actual knowledge advances, we increase likewise our acquaintance with its comparative deficiency. As the circle of intellectual light expands, it widens proportionably the circumference of apparent darkness."—p. 133.

An instructive essay succeeds on "*Dyspeptic and Hepatic Diseases.*" Here at length we possess an opportunity of quoting a practical observation of the learned author; the merit of which we shall present our readers with the means of estimating:

> "Hepatic disease, although belonging more properly to a warmer climate, forms a large proportion in the class even of English maladies.
>
> "It were to be wished that the commencement of mischief in an organ so important as the liver, should invariably announce itself by some obtrusive and unequivocal symptom; but this essential viscus has often been found after death to be indurated, or otherwise injured, without any marked indication of disease during the life of the patient, except dyspepsia, or simple indigestion. Fortunately

however, in the greater number of cases, less doubtful signs of this disorder shew themselves before it is too late to avert its most lamentable consequences. A sense of heaviness in the upper part of the abdomen, an obtuse pain below the ribs on the right side, a troublesome acidity or flatulence in the first passages, with an uneasiness when lying on the left side, are grounds of reasonable apprehension. When a *bon vivant*, who has indulged in those habits of life, which in this country at least are observed to be by far the most frequent exciting causes of liver complaints, begins to be conscious of these symptoms, no time ought to be lost in reforming his regimen, as well as in having recourse to the modes of recovery which are to be derived from the medical art. On a close interrogation of invalids with disorganized livers, we shall often discover that they can recollect the exact time since which they always found themselves lying on the right side, on awaking in the morning. It is probable that inward sensations during sleep, unconsciously inclined the patient to take this posture. We should, however, be aware that an equal ease in lying on either side, is no demonstration of the liver being in a sound condition. A sallowness of the skin, and particularly a light-yellow colour of the forehead, may be classed among the signs of hepatic disorganization; so may likewise a pain under the right shoulder blade, and what is particularly worthy of notice, a regular morning cough, followed by the ejection of a little froth from the mouth. The liver may sometimes be felt hard or enlarged; but there is no one, it is to be hoped, who would defer his apprehensions until they were forced upon him, by this palpable completion of evidence.

" After all, a large proportion of what are in general called cases of disordered liver, may be more properly considered as cases of broken-up habits or worn out stamina. The constitution is, perhaps, not so often affected in the first instance by a disease of the liver, as the liver is by the previous disease or decay of the constitution. On this account it is not altogether by the remedies which seem to have a more particular operation upon this organ that its irregularities are to be corrected, or its obstructions to be removed, but in a great measure by those other medicines and methods of treatment that are calculated to restore lost tone to the general fibre, or to prop for a period the tottering pillars of the frame."—144-9.

On the use of mercury in hepatic diseases, the Doctor is less confident than many other writers. He says,

" but calomel, powerful and beneficial as it unquestionably is, when seasonably and discreetly administered, has sometimes, perhaps, been extolled with an intemperate zeal, and appears to have been employed in certain cases with too little reserve and discrimination. There is reason to believe that many a patient, supposed to be hepatic, but in fact only dyspeptic, has fallen a martyr to a mercurial course; a course which has often been persisted in with a perseverance undaunted by the glaring depredation which it produced. Mercury would be more cautiously administered, if sufficient attention were paid, not only to its immediate and more apparent, but also to its ultimate and comparatively clandestine operation upon the human frame."—p. 148.

On "*Palsy, Idiotcy, Spasmodic and Convulsive Affections,*" some cases are here related; out of which we shall select the following, which occurred during the author's connection with the Finsbury Dispensary:

" A young woman, who, for many years past, has been confined to her bed in a state of nearly universal spasm. She lies rigid and motionless, with her eyes more than half closed, and every other organ of sense almost completely shut against external impression. The physician who attended her, by speaking in her ear as loud as it was possible for him to do, succeeded only so far as to produce a motion of the lips that betrayed an ineffectual endeavour for utterance. It seems to be a case in which there is an absence of actual sensation, although by some violent exciting cause the sensibility may at times be imperfectly awakened. Lying in such a state, with scarce any symptom of vitality, but a feeble respiration, she can be regarded as little more than a breathing corpse. It is possible, that in this case consciousness may still exist, although it be unable to appear, in consequence of the voluntary muscles usually employed to express it, refusing in the present instance to discharge their accustomed office. It is to be hoped, however, that this is not actually the fact. Nothing is more terrific to the imagination than the idea of being buried alive, and what mode of being buried alive can be conceived more truly miserable, than for the soul to be entombed in the body."—p. 181.

The subject of "*Hereditary Madness*" gives occasion for some moral animadversions.

" The heir of a sound constitution," says he, "has no right to regret the absence of any other patrimony. A man who has derived from the immediate authors of his being, vigorous and untainted stamina of mind as well as of body, enters upon the world with a sufficient foundation and ample materials for happiness. Very different is it with the progeny of those who are constitutionally diseased in any way, but more especially with the progeny of persons who are radically morbid in intellect. No wealth, which it is in the power of such parents to bequeath, can compensate the probability of evil which they entail upon the creatures and the victims of their selfish indulgence or their criminal indiscretion."—p. 184.

But after adducing many arguments favouring the doctrine of hereditary diseases, the author, as if fearful he had gone too far, adds:—

" After all, I would be understood to inculcate, that strictly speaking, it is the *tendency* only to insanity that is inherited, or, in other words, a greater facility than ordinary, to be acted upon by those external circumstances, that are calculated to produce the disease."—p. 189.

The subject of *Lunatic Asylums* draws forth some strong remarks on the "injustice committed in those infirmaries for disordered, or rather cemeteries for diseased, intellect." What the author has stated in the conclusion of this essay, though written some years ago, and published in the Monthly Magazine, he thinks is confirmed by the recent Parliamentary Report on Mad-Houses.

As we consider our author in the present instance a popular writer, we shall refrain from observations on this effusion.

The "*Importance of counteracting the tendency to Mental Disease*" is enforced with great truth; but on this subject, which would have borne a more ample discussion, and which is peculiarly well adapted to our author's powers, we are sorry that he has contented himself with throwing out general hints only. *Bleeding* is rather minutely treated of; and the author more keenly than wisely observes,

> "At the sight of a person in any kind of fit, the surgeon almost instinctively pulls out his lancet. Sometimes, even after the paroxysm has subsided, bleeding is had recourse to from a vague and empirical notion of its indiscriminate utility in this class of diseases. Less slaughter, I am convinced, has been effected by the sword, than by the lancet,—that minute instrument of mighty mischief!"—p. 219.

On "*Pharmacy*." The author condemns the practice of prolonging courses of medicine in cases of convalescence; and he is equally severe on the custom of blending numerous drugs in one prescription. His observations are judicious, and deserve the serious consideration both of practitioners and invalids.

Ablution and *Bodily Exercise* are strongly recommended to nervous patients in two distinct papers, which exhibit much acuteness of observation upon the state of society, and the influence of custom in the production of diseases Thus, for instance, he says,

> "Improvements in the mechanism of modern carriages, by which they are made to convey a person from place to place, almost without giving him a sense of motion, may be one of the circumstances that have contributed to the increased prevalence of those maladies which originate in a great degree from a fashionable indulgence in lassitude and languor."—p. 243.

One of the most novel and ingenious essays is that on "*Real Evils considered as a Remedy for those of the Imagination*."

It is observed, that

> "a diseased fancy will not unfrequently produce nearly all the symptoms, or at least all the sensations of bodily disease; but any very serious malady of the latter kind is calculated, on the other

hand, to dissipate the clouds which hover over the imagination, Hypochondriasis may often thank calamity for its cure.

"Some years ago I knew a lady who had for a long time been a miserable victim to the vapours, but who was completely cured of this complaint by the supervening of another, which was more immediately alarming, and which precluded indeed the possibility of much longer life. No sooner was her new disease ascertained to be an aneurism of the aorta, and the necessary result of that complaint was explained to her, than all her nervous feelings vanished, and she even bore the announcement of her inevitable fate with a calmness which is seldom exhibited under such trying circumstances. The near prospect of death, instead of overpowering, seemed to brace anew the relaxed energies of her frame; and what is well worthy of remark, so far from being, during her subsequent days, selfishly absorbed by her real, as she had been before by her imaginary ailments, she interested herself almost continually and exclusively about the happiness of others; and, in proportion as she became more amiable, found herself less wretched."—p. 250.

The last essay is on the importance of "*Occupation*" as a preventive of mental disease, and a stimulus to virtue and cheerfulness. Here also we have a remarkable case which came under the observation of the author, and with which we shall close our extracts from this curious and entertaining performance:

"I was once consulted by a hypochondriacal patient who had been the greatest part of his life a journeyman taylor, but who, by an unexpected accident, became unhappily rich, and consequently no longer dependant for his bread upon drudgery and confinement. He accordingly descended from his board: but Charles the Fifth, after having voluntarily descended from his throne, could not have regretted more severely the injudicious renunciation of his empire. This man, after having thrown himself out of employment, fell ill of the tedium of indolence. He discovered, that the having nothing to do, was more uncongenial to his constitution, even than the constrained attitude, and the close and heated atmosphere in which he had been accustomed to carry on his daily operations. In one respect, however, the repentant mechanic was less unfortunate than the imperial penitent. It remained in the power of the former to reinstate himself in his former situation, which, after having resumed it, no motive could a second time induce him to relinquish." —p. 260.

In this sketch, enough perhaps has been quoted to give some impression of the pleasure to be derived from the perusal of these essays.

Seldom has it been our lot to examine a book written in a style so animated, flowing, and vigorous. In many parts, the composition is perhaps too poetical. Nothing however can be better calculated for a work purely popular; and having, as we before hinted, so few pretensions to a medical character.

Dr. Reid is not new to the public as an author. In that capacity, neither his talents nor professional fame require our commendation. The present work does honour to his philanthrophy; and will class him high in the rank of writers, if it add not to his reputation as a physician.

III.

Medico-Chirurgical Transactions. Vol. vii. Part I. 8vo. pp. 299. London 1816. Longman and Co.

In the last volume of these Transactions it was announced, that in future a half volume would be published twice a year; and the present part is the first fruits of this plan. It contains nineteen essays, the greater part of which are surgical, and not the productions of Members of the Society; and as in the former volumes the papers are not arranged either according to the affinity of the subjects of which they treat, or in the order of time at which each was read to the Society, but either according to the whim of the Council, or as they have accidentally come to hand. This is, in our opinion, an imperfection of some consequence, as much of their interest is lost by the desultory manner in which they are thrown together. In our analysis, therefore, we will endeavour to remedy this defect, by examining them according as their subjects have a mutual affinity, or may be regarded as being Chemical, Anatomical, Physiological, Surgical, Medical, or Biographical.

The only chemical paper, the first in the volume, is a *Chemical Analysis of the Mineral Waters of Spa.* By Edwin Godden Jones, M.D. These waters were first partially examined by Bergman, and afterwards more fully by Dr. Ash, who published his experiments in 1788; but as there appeared some deficiencies and inaccuracies in the published accounts of them, Dr. Jones was induced to undertake their complete analysis.

In detailing the geological characters of the country in which they are found, our author demonstrates by an analysis, that the water of the fountain which supplies the town of Spa for domestic purposes, is considerably purer than the Malvern Spring, as it contains no more than 2·6 grains per gallon of fixed ingredients; of which 0·5 are muriate of soda, 0·9 sulphate of lime, 1·3 silex, and 0·1 alumine; a very remarkable fact, considering that the country abounds with mineral springs. Many of these springs which appear among the mountains are "nameless and unknown;" and even of the sixteen enumerated by Lucas, Dr. Jones examined only the Pouhon, the Geronstere, the Sauviniere, the Groesbeeck, the two fountains of the Tonnelet, and the Watroz, all of which "are much celebrated and frequented for their medicinal qualities." As we conceive it unnecessary for us to enter into the details of the analysis, which appear to be judiciously planned and carefully executed, we shall notice a few particulars only "relative to each spring, and subjoin the general comparative table of results, as drawn up by our author. It is requsite however to premise, that all these waters contain the same ingredients; and that the only difference between them consists "in the quantity and proportions of those substances."

The *Pouhon* is the most celebrated and medicinal of the Spa springs; and affords the water known all over Europe under the name of Spa Water. It rises in the centre of the town, and Dr. Jones supposes its sources are in the mountain which rises immediately behind it. The supply of this well is much greater than can be consumed or even wasted; the water in the well is transparent, perfectly colourless, and constantly agitated by large bubbles rising through the loose stones at the bottom. Its temperature is 50° Faht.; and its specific gravity 1·00098. It is inodorous, except in September, "after heavy rains of some continuance," when it smells not unlike common hydrogen gas; its taste is agreeably acidulous and chalybeate. When exposed in a glass, it parts with air bubbles, loses its taste, becomes turbid, and "lets fall a brownish yellow powder;" but when inclosed in well-corked and "well-cemented" bottles it can be preserved for years unaltered.

The *Geronstere*, the next spring in point of celebrity, two miles from the town of Spa, is situated in a wood on the side of a quartzose schistose mountain. It affords five gallons only of water every hour; which, when examined in the well, is perfectly transparent, and agitated with bubbles, but in a less degree than that of the Pouhon. Its temperature is 49° Faht., and its specific gravity 1·0008. Exposed in a glass, after some time it throws down an ochery precipitate; and at first exhales a disagreeable odour of hydrogen gas, which is however soon dissipated; and which Dr. Jones suspects to arise from a small portion of hydrogen "evolved, during the solution of the iron which the water contains, in the carbonic acid." Its taste is less acidulous than the Pouhon water; but more strongly chalybeate.

Much of the celebrity of this spring has arisen on the erroneous supposition that it contains sulphuretted hydrogen, an error, which even Dr. Ash believed; but our author ranks it as a simple chalybeate.

The *Sauviniere* is situated a mile and a quarter from Spa, on the same mountain ridge as the Geronstere, the well being cut out of the schistose rock, through the fissures of which the water and streams of air bubbles are continually issuing. Its temperature is 49½°, and its specific gravity 1·00075. Like the two former, it deposits an ochery precipitate when exposed in a glass; and has a faint odour resembling that of the Geronstere. Its taste is acidulous and agreeable. Dr. Ash supposed it contained potash, as an ingredient, an error which our author corrects.

The *Groesbeeck* is within a few yards of the *Sauviniere*, and is also cut in the schistose rock. It gives out larger air bubbles than the other springs; its temperature is 49½°, its specific gravity 1·0007, and its taste brisk and agreeable; being however less chalybeate than the others. Our author could not detect the smallest trace of potash in it, which Dr. Ash had placed amongst its ingredients.

The fountains of the *Tonnelet* are two springs within a few feet of each other, about a mile and a quarter from Spa; and surrounded by a wet boggy soil, where many chalybeate springs ooze out, and stain the vegetation with ochre. The quantity of carbonic acid in the first of these fountains is so great, as to give it the appearance of a boiling spring. The quantity of water is considerable; its temperature is 49½°, and its specific gravity 1·00075. It sparkles beautifully in a glass, has a perceptible odour, and a decidedly chalybeate but agreeably pungent acidulous taste; and from the escape of the gas, stimulates the nose when drank. The second Tonnelet has the same external qualities, but contains less carbonic acid. The quantity of this gas extricated in this neighbourhood is indeed so great, that on sudden changes of temperature, besides the increase, of that in the fountains, the cellars in the village of Nivese, which are on the bare schistose rock, became so filled with it, "that no animal can venture into them without perishing." Besides being drank, the water of these fountains are used in the form of hot and cold baths.

The *Watroz* "is situated in a marshy bottom, between the Tonnelets and the Sauviniere;" but is now almost deserted. This spring yields but little water; its temperature, from its exposure, is uncertain; and its taste is less acidulous than the others," but decidedly chalybeate. It has the reputation of being purgative; but this is a mistake.

The following table shews the nature and quantities of the ingredients found in each of these waters:

TABLE

Exhibiting the Nature and Proportion of the Substances contained in One Gallon of the respective Spa Waters.

FOUNTAIN.	Temperature.	Specific Gravity.	Carbonic Acid Gas in cubic inches.	Solid Contents Grs.	Sulphate of Soda.	Muriate of Soda.	Carbonate of Soda.	Carbonate of Lime.	Carbonate of Magnesia.	Oxide of Iron.	Silex.	Alumine.	Loss.
Pouhon………………	50	1.00098	262.0	26.8	0.92	1.26	2.45	9.87	1.80	5.24	2.26	0.29	2.71
Geronstere………………	49½	1.0008	168.5	12.50	0.62	0.64	1.43	5.20	1.05	0.94	1.40	0.19	1.03
Sauviniere………………	49½	1.00075	241.4	8.50	0.05	0.25	0.60	3.50	0.60	2.10	0.40	0.10	0.90
Groesbeeck………………	49½	1.0007	265.0	5.90	0.05	0.15	0.30	2.40	0.20	1.55	0.60	0.10	0.55
1st Tonnelet………………	49½	1.00075	282.0	5.30	0.06	0.15	0.20	1.10	0.30	2.70	0.60	0.10	0.09
2d Tonnelet………………	49½	1.00075	260.6	3.70	*	*	0.10	0.90	0.20	1.50	0.65	*	0.35
Watroz………………			not ascertained.	9.30		0.2	0.10	1.40	1.90	2.60	0.90	0.60	1.80
The Pouhon, after much wet weather.				32.3	0.80	0.95	20	13.82	2.97	4.45	3.27	0.38	3.68

* Quantity not appreciable.

Dr. Jones, after pointing out the differences between his own analysis and those of Bergman and of Dr. Ash; and very satisfactorily proving the greater correctness of his own; proceeds to examine the *Medicinal Properties of the Mineral Waters of Spa.*

The comparative table shews that any difference in the powers of these waters must altogether depend on their difference in point of strength. But considered as chalybeates, our author properly observes, "the method of conducting a course of them must be generally the same." Their chief operation is on the kidneys and skin; but they sometimes increase all the secretions. When first drank, they excite a considerable degree of vertigo and drowsiness, particularly when taken upon an empty stomach, owing "to the direct operation of the carbonic acid on the system, through the medium of the stomach;" but, our author ascribes it also in part "to the temporary plethora of the vessels of the head, occasioned by the facility and rapidity with which the pure fluid enters the absorbent system." This determination to the head subsides, as soon as their diuretic effects are evident; or, as is the expression at the wells, "les eaux passent bien:" and when they fail in this respect, they prove not only not beneficial, but, in certain habits, are altogether inadmissible. They have been found useful in painful affections of the kidneys and bladder, attended with bloody and purulent urine, whether arising from ulceration or calculi; effects which Dr. Jones attributes to the rapidity with which these liquids pass through the urinary organs, preventing the formation of new calculi, washing away small grains already formed, and, by "cleansing the ulcerated parts," contributing to their healing. Their importance in those female affections for which chalybeates are prescribed, is sufficiently obvious; but they are contra-indicated in all complaints in which there is an inflammatory tendency, or a determination to the head.

Upon the whole, this paper is extremely interesting; but our impartiality obliges us to say, that it is carelessly written, and not free from errors both of grammar and construction.

The only papers which can be regarded as anatomical, are the tenth and sixteenth. The first is a Latin paper, intitled *Observationes quædam de Hottentotis, præsertim de Structura genitalium peculiari Hottentotarum.* Autore Gulielmo Somerville, M.D.

Almost all the writers on the Cape, Dr. Somerville observes, have noticed this peculiarity of structure; but they differ considerably, and are so obscure, that he adds, "non desint qui dubitent in qua genitalium parte, insit mira illa varietas." After noticing other circumstances which distinguish the Hottentot from the surrounding people, the most remarkable of which, are the pendulous mammæ, hanging like bags suspended from the neck, and reaching to the groins; and the prominent nates; which "non more solitô leniter rotundæ ad lumbos exsurgunt, sed recte exeunt, quasi corpus antrorsum inclinatum esset;" he thus describes the peculiarity of the genitals:

> "Ex interiore parte rimæ pudendi, substantia laxa, pendula ac sæpe rugosa descendit, quæ curiosius explorata duplex esse reperitur, ex nymphis productis constans, adeo arcte inter se cohærentibus, ut simplex esse videatur. Nymphæ in quibusdam extra marginem labiorum quinque uncias descendunt.
>
> "Hottentotæ infanti rima adeo hiat ut nymphæ appareant, & puberem circa ætatem paullatim prodeant. Attamen ex maturâ admodum Venere, brevi flaccescunt et tandem marcidæ fiunt et rugosæ. Hottentotis labia exteriora minora sunt et minus prominent quam aliis mulieribus, interdum etiam adeo sunt tenuia ut pene deesse videantur et difficile omnino sit scitû ubi labia desinunt, ubi nymphæ incipiunt.
>
> "Clitoris solito loco sita, angulo nempe ubi nymphæ inter se dividuntur, fabricam peculiarem de quâ agitur, ipsis nymphis inesse monstrat."—p. 157.

The latinity of Dr. Somerville's paper is purer and more classical than is usually met with in medical dissertations.

The second anatomical paper contains *Particulars concerning the Structure of a monstrous Fœtus.* By Mr. Maunoir, Professor of Surgery at Geneva.

This was a double fœtus of very singular structure; but, as the description, which is illustrated by a plate, does not admit of abridgment, we must refer our readers to the work itself for an account of it.

(To be continued.)

PART III.

SELECTIONS.

Some Account of the Alstenia Teiformis, or Tea of Bogota. Drawn up from the Journal of M. Palacio-Faxar, *by* Mr. Faraday, *Assistant in the Laboratory of the Royal Institution.*

The Alstenia Teiformis, though known in Europe, has not yet excited all the attention it appears to deserve. Dr. Mutis has given a description of it, and of its uses, both as a medicine and a luxury. As the plant is hardy, and flourishes in cold climates, it may deserve attention as a substitute for the tea plant of China; for if the infusion of its leaves be found salutary, and perhaps in some respects preferable to that obtained from China tea, the cultivation of the plant might be undertaken in this country*, and enable us to procure that at home for which we are now dependant on others.

"From Merida of Maracaybo (M. Palacio says) I went to Barinas, by Los Callexones, and having ascended the Paramo of Mucuchies, where reigns a perpetual frost, I descended gradually to Las Piedras, through a road covered with Espelezia, Stellaria, and Gentiana. The Callexones is a road through a ridge of rugged mountains, which extends as far as Barinitas. In travelling on this road, especially on the mountain called Lacamacho, and in the height of from 1500 to 1700 fathoms above the level of the sea, I perceived an odoriferous scent, which my fellow travellers assured me was produced by a shrub, known in the country by the name of Albricias, and that it was used to perfume the churches on festival days, by strewing them with fresh leaves of it: I then recognized it to be the Alstenia Teiformis, or Tea of Bogota, described by Dr. Mutis."

Some of the leaves were collected. Portions were dried in the sun, and also upon heated porcelain plates. Those dried in the sun made the strongest infusion, but did not differ from the others in any of their general properties.

A table spoonful of the bruised leaves, with a pint of water, produced an infusion of a yellow green colour, of an aromatic smell and pleasant taste, and requiring but little sugar to make it sweet. It was refreshing, agreeable to the palate, and increased the perspiration. A second portion of water being poured on the same leaves, an infusion, clearer than the former, was produced; but still possessing an agreeable taste and smell. The latter is the infusion prescribed by Dr. Mutis as being very salutary, if taken as a drink at breakfast and supper. The stronger infusion is recommended in cases where sudorifics and cordials are prescribed. A third portion of water formed a tea still very pleasant, and possessing much of the peculiar taste and flavour of the leaves.

The dried leaves reduced to a powder are applied, in the country where the plant is found, as a remedy for cold in the head, and which is used as snuff, and causes sneezing.

By distilling three table-spoonfuls of the leaves, in four pints of common water, above a pint of highly perfumed liquor was obtained. The rest of the water being poured from the leaves was evaporated, and left a solid substance, having a strong astringent taste, but no smell. Five drachms of the leaves being infused in alcohol, and the liquid evaporated, a blackish resinous substance was obtained, pungent and astringent, keeping its perfume, burning with a bright flame, and when taken into the mouth, colouring the spittle green.

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* M. Palacio-Faxar would send plants of the Tea of Bogota to England, should any person be desirous to cultivate them.

◆

A few experiments were made on some of the leaves of this plant, sent by M. Palacio Faxar to the Royal Institution. Four hundred and eighty grains were digested in repeated portions of alcohol, until nothing more appeared to be taken up. The leaves, when dried, had lost nearly all taste and had no smell; they weighed only 320 grains. The alcohol, whilst cooling, deposited many flocculi; these were separated on a filter, and formed a dark-green substance. It fused by heat, passing into the pores of the paper; gave way under pressure, and possessed the smell, lustre, and other properties of wax; which substance it appeared to be, mixed with a little extract. The weight of the filter had increased eight grains.

The cold alcoholic solution was of a fine green colour; it precipitated salts of iron black, and threw down a precipitate with jelly much more abundant than that produced by alcohol alone. It precipitated with ether and with water, exhibiting the presence of extract and of resin. Evaporated to dryness, it yielded eighty-two grains of a solid dark green substance; much of this appeared to be wax deposited, as the quantity of alcohol diminished. The re-addition of alcohol in small quantities formed a turbid solution; in larger quantities, a clear one, precipitable by re-agents as before.

Four hundred and eighty grains of the leaves boiled in repeated portions of water, were dried; they had neither taste nor smell, and weighed 270 grains only. The decoction precipitated salts of iron and solution of gelatine. It was of a dull green colour, and of a strong aromatic taste and flavour. Evaporated to dryness, it weighed 144 grains.—*Journal of Science and the Arts*, No. III.

PART IV.

FOREIGN MEDICAL SCIENCE AND LITERATURE.

PHYSIOLOGY.

I.—The formation of carbonic acid in the process of respiration, has been pretty generally admitted to depend on th union of the oxygen of the atmospheric air inspired, with t carbonaceous matter thrown off from the lungs; or rather from the blood, in its course through the pulmonary circulation. This theory, however, is endeavoured to be controverted by Dr. Coutanceau, in a work lately published at Paris, under the title of *Révision des Nouvelles Doctrines Chimico-Physiologiques*[*].

The experiments of Dr. Courtanceau, which were made with the assistance of M. Nysten, are intended to prove, that carbonic acid is formed in the lungs without the participation of oxygen; and to ascertain in what proportion this acid exists in the products of artificial respiration, carried on by means of azotic gas, comparatively with that produced during the natural respiration of atmospheric air.

With these objects in view, the experimentalists first analysed the atmospheric air of the School of Medicine of Paris, in which their operations were carried on, and found that it consisted of twenty-two parts of oxygen gas, two of carbonic acid gas, and sixty-six of azotic gas in 100. They then analysed the common pulmonary gas, produced by the respiration of atmospherical air. "After having respired freely for some seconds in the court of the school," observes M. Coutanceau, "we then retained our breath for about twelve or fifteen seconds, so that it might be fully charged with carbonic acid, after which, we respired strongly through a tube communicating with a bell glass in a mercurial trough. The pulmonary gas, obtained in this manner, was next introduced into a graduated tube, taking care to preserve the level of the mercury: some lime water was then thrown into it, which instantly lost its transparency; this was agitated, and occasionally fresh portions of lime water thrown in, until no further absorption took place. By measuring the gas remaining in the graduated tube, the diminution of its volume gave us the bulk of the carbonic acid which the pulmonary gas had contained. In order to obtain the quantity of the oxygen, we introduced into the remainder of the pulmonary gas, deprived of its carbonic acid, a small piece of phosphorus, which was left to undergo a slow combustion for the space of from twenty-four to forty-eight hours. The residue, thus procured, was considered as pure azotic gas. This experiment having been repeated six times, gave varied results of the proportion of carbonic acid and oxygen gas, contained in the pulmonary gas expired by M. Coutanceau and his coadjutor; but the mean was found to be seven parts of carbonic acid gas and thirteen of oxygen for M. Nysten, and fourteen for Dr. Coutanceau. But as the atmospherical air, which had been inspired, contained two parts of carbonic acid and twenty-two of oxygen gas in every 100; "that reduced the carbonic acid formed in our lungs," adds M. Coutanceau, "to five and a half parts, while it gave, as the depreciation of oxygen gas, nine parts for M. Nysten and eight for myself."

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[*] *Révision des Nouvelles Doctrines Chimico-Physiologiques, suivie d'experiences relatives à la Respiration:* par M. Coutanceau, Docteur en Medecine. 8vo. pp. 302. Paris.

The respiration of azotic gas was the object of a third series of experiments; and for this purpose, an apparatus, similar to that employed by Dr. Beddoes for the respiration of factitious airs, was employed. Although persuaded that azotic gas is not in itself deleterious, yet the experimentalists experienced several inconveniences in respiring it. The result of these experiments, many times repeated, demonstrated that azotic gas, after being respired, contained, or rather was mixed with, from seven to eight hundred parts of carbonic acid gas, a quantity at least equal to that which was obtained from the pulmonary gas expired after the inspiration of atmospherical air. The precautions which were taken to render the azotic gas perfectly pure, and the details of the mode of respiring it, establish the accuracy of these experiments. We hope they will be repeated on this side of the Channel: for, notwithstanding the apparent accuracy of the French experimentalists, the experiments of Mr. Ellis, which we have repeated, and those of other British physiologists, render us rather sceptical, and slow in admitting the conclusions of M. Coutanceau and M. Nysten.

PRACTICE OF MEDICINE.

II.—*Dr. Joseph Frank*, it is said, has satisfactorily proved that the *Plica Polonica* does not proceed, as has been asserted, from uncleanliness, or syphilis, or as a consequence of refrigeration of the head and cutting off of the hair, or from an arthritic source; but that it originates from a species of leprosy. He arranges the reasons for his opinions under historical, symptomatical, and therapeutical heads.

1. That the plica polonica has been introduced into Poland by the Tartars, and consequently is of oriental origin, the native source of leprosy. About the same time that this happened, in 1287, leprosy made very great havock throughout Europe. There are likewise still many vestiges of that distemper discoverable in endemial exanthemata; as in the *mal de rosa* in Asturia; in the *elephantiasis* which sometimes appears in the South of France; in the *pellipsa* in Lombardy; and in the *radesyge* in Norway.

2. That the symptoms of both disorders bear a striking resemblance; that they are contagious, common to men and animals, and spare infantile age; produce great and general debility, dullness, a small pulse, turbid urine depositing a sediment, hæmorrhoids, constipation, flatulency, eructation,

peculiar smell of the perspiration, febrile action, succeeded by exanthemata and cutaneous ulcers, and insensibility of the skin. The last, however, is not a concomitant symptom; but so violent when it does exist, that the patients neither feel when they are pricked with needles, nor when they are scalded with hot water: and there is likewise deformity of the nails and hair. The ulcers in plica have much similitude with cancerous ulcers, which *Alard* likewise declares to be a kind of leprosy; and these are distinguished by being confined to the glandular system, and by their spreading more slowly.

3. Both disorders are with equal difficulty cured. Mercury does not succeed in either of them. The best remedies, according to Dr. Frank's observations, are the hemlock and sulphur.

III.—The following curious *History of Seventeen Hydatids, passed by the Urethra in consequence of an Antisyphilitic Course*, was read by *Dr. Auglagnier* to the Académie de Médecine de Paris, at the sitting of that Society in March last*.

" A general officer contracted a gonorrhœa nearly twenty years ago. The surgeon attached to his corps advised him to use astringent injections; after which a contraction of the urethra with dysury was not long in manifesting itself.

" The duties of this officer did not permit him to follow a methodical treatment; and he therefore made the campaigns of Egypt and of Spain under almost continual sufferings. The difficulty of passing his water became habitual, as commonly happens in similar cases: and the patient was forced, at different times, to make use of gum elastic bougies. The dysury was accompanied with a constant discharge of puriform matter; for which the patient, for a long time, but without any effect, took a great quantity of balsam of copaiva.

" In the beginning of last April the General expressed to me a desire of putting himself under my care; but I warned him, beforehand, that it would be long before he could be cured, on account of the length of time the complaint had continued. He was, however, willing to submit to any treatment. At this time the perinæum and scrotum were covered with tetters, accompanied with great itching. The discharge from the urethra was very abundant, and greenish; the glans being always covered with matter; and the patient made water with great pain, drop by drop, and even five times in an hour. With the view of relieving these symptoms, I prescribed baths, demulcents, and injections with the decoction of linseed and poppy heads. A fortnight afterwards the patient was attacked with a bilious fever, on which account the anti-venereal treatment was suspended: but as soon as he recovered I ordered a hip bath, composed of a decoction of bran, with the oxymuriate of mercury, gradually increasing the portion employed. The number of baths used was seventy. A drink made with the root of burdock and elm bark was also ordered; and injections as before, with the addition of a small quantity of oxymuriate of mercury. This treatment produced a very good effect; the itching was allayed, and the discharge diminished in quantity and changed in colour. Previous to this I was ignorant that the patient had, for more than four months, voided along with his urine a considerable quantity of matter, resembling the white of an egg, having an insupportable odour, and adhering to the bottom of the *pot de chambre*. This matter was sometimes discharged at the end of the emission of urine, and sometimes with the first drops, which made me apprehensive that there was a deep seated affection of the urinary passages.

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* *Journal General de Médecine*, tome lvi. p. 168.

" I prescribed the waters of Contrexeville, and began the employment of elastic bougies. At the first introduction I found an obstacle a little beyond the gland, which convinced me that the spasm was not trifling, from the impossibility of passing it further: and several days afterwards I encountered a second obstacle about the middle of the urethra. Owing to the introduction of the bougie, the discharge was increased, as commonly happens; and a great quantity of matter was found attached to that part of the instrument where the obstacle was felt.

" Ten or twelve days afterwards the bougie penetrated, after considerable pain, into the bladder. The patient experienced, during the passage, a very violent pricking sensation and great itching in the canal especially towards the prostate; but after the bougie was introduced, he could retain it for a considerable time without any inconvenience; and, contrary to my advice, it was kept in for nearly four-and-twenty hours. This treatment was continued for some time. The appetite was, notwithstanding, irregular; the patient was losing flesh; he was irritable, and complained of a violent pain in the lumbar region. A slight swelling also was perceived upon examination in the region of the left kidney; and the pain became excruciating. Two or three days afterwards, however, the General voided by the urethra, and almost without pain, a mass of an oblong form, and about the thickness of a quill. This body, when ejected, was filled with liquid, according to the report given to me; for I did not see it until after it had been left for two days upon blotting paper, where it had dried; so that it was impossible for me to discover its nature. The day after this he voided two more, a little smaller; and these I perceived were *hydatids*. He felt immediately relieved, and made water with a full stream; but he hardly ate any thing; and still fell away very fast. The pain in the kidney returned; and as the urine contained much less puriform matter, I substituted the waters of Seltzer for those of Contrexeville.

"The patient from this time voided, every two or three days, some hydatids, which continued decreasing in size: but owing to the negligence of the attendants, I could only obtain six out of the seventeen which he voided. Some time after having commenced the use of the Seltzer waters, the puriform matter contained in the urine diminished considerably; and at the end of about twenty days there was none of it to be seen. The red colour the urine had hitherto displayed now changed to a more natural one; it was also more abundant; and the functions of the urinary passages were soon completely re-established; while the appetite and gaiety returned, and the strength was recruited. The General used the waters of Seltzer until his departure, and introduced the bougie twice a day, two hours in the morning, and as long in the evening. In the beginning of January he again voided a hydatid. The discharge by the urethra diminished so much, that I did not think it necessary to employ any thing but the bougie to dry it up: and he left me on the third of February, in the best state of health.

"It is commonly in the brain, chest, stomach, intestines, but particularly in the kidneys, liver, ovaria, and the womb, that hydatids are formed: and they have been found in the placenta. They are met with seldomer in men than in sheep, dogs, and apes; but very frequently in horned cattle. *Klein* found live ones in the kidney of a wolf; *Cowper* in that of dogs; and *Daubenton* has observed thousands of them in the ape *Costa*. *Macbride* thought that hydatids were only coagulated lymph. *Tyson* was the first who observed they were worms; a fact which Pallas confirmed, by describing, with the greatest exactness, the worms of hydatids, under the name of *tænia hydatida*.

"Two species of hydatids have been observed in the kidneys:—first, large capsules, hard and elastic, filled with a limpid and coagulable serous fluid, such as were voided by my patient;—secondly, all the substance of the kidneys changed into round bags, contiguous to each other, filled with a limpid water, similar to a bunch of grapes, and separated by hard elastic partitions, lined with a chalky plaster. These hydatids generally produce a state of irritation, and marasmus, the cause of which is very obscure, and which commonly proves fatal. In my researches I have found no mention of similar cases, except in the *Journal de Médecine* for July 1790, which contains remarks upon two hydatids of the kidneys, voided by the urethra, in two different subjects, who recovered their health. In these cases the disease was so far advanced as to produce ulceration in the lumbar region, accompanied with bloody urine. The *Journal de Médecine* for September 1758, contains also a paper upon a case of worms, supposed to have come from the kidneys, voided by the urethra of a child.

" Mercury being a remedy which penetrates into every part of the frame, may we not suppose that it contributed to the emission of these hydatids ?"

CHEMISTRY.

IV.—*M. Magendie*, well known by his physiological labours, has published the following notice on " *The Gases generated in the Human Intestines in a state of health**."

" M. Jurine of Geneva is the only person to my knowledge who has analysed the gases contained in the intestines of a healthy person. In a memoir, which obtained the prize given by the Societé de Médecine of Paris in 1789, he gave the results of experiments made upon the body of a madman found dead from cold in his cell, and immediately opened. He discovered, in the intestinal canal, oxygen gas, carbonic acid gas, azotic gas, and sulphuretted hydrogen gas. He also ascertained that the proportion of carbonic acid gas contained in the stomach and in the small intestines is greater than that in the large intestines; whilst the proportion of azotic gas is directly the reverse. At the time, however, when M. Jurine made his experiments, eudiometry was in a very imperfect state; and they were, besides, made only upon a single body; whilst, on the contrary, at the present time, in which eudiometry has arrived at very great perfection, and chemical and physiological researches are more perfect, these experiments appear unsatisfactory.

" Having had at my disposal, in the course of the years 1814 and 1815, the bodies of four malefactors, a little after their execution, I thought it might be useful to prosecute the subject; and M. Chevreul joined me in making the analyses, of which I have now the honour to present the Academy with an account.

" At Paris it is customary for condemned persons to take a slight repast an hour or two before their execution, on which account digestion is in full activity at the time of their death. In procuring the different gases of the intestinal canal, I took the necessary means for preventing the mixture of those contained in the stomach with those in the small intestines, and of these latter with those of the large intestines; all were procured under mercury, a precaution that M. Jurine did not take, and which must of course have influenced the results of his experiments, since several intestinal gases are soluble in water. In our first experiments we found in the stomach oxygen gas, carbonic acid gas, pure hydrogen gas, and azotic gas: in the small intestines we found the same gases, with a smaller proportion of oxygen. The large intestines contained carbonic acid gas, azotic gas, and carbonated and sulphuretted hydrogen gases. After having thus ascertained the nature of the different intestinal gases, we were desirous of knowing exactly their respective proportions.

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* *Annales de Chimie et de Physique*, tome ii. p. 292.

"In a fresh series of experiments made upon the body of a young man twenty-four years of age, who, two hours before his execution, had eaten some prison bread, some Swiss cheese, and drank a little weak wine and water (eau rougie), we found in the stomach,

Of oxygen gas	11·00
Carbonic acid gas	14·00
Pure hydrogen gas	3·55
Azotic gas	71·45
Total	100·00

"The small intestines of the same individual contained,

Oxygen gas	0·00
Carbonic acid gas	24·39
Pure hydrogen gas	55.53
Azotic gas	20·08
Total	100·00

"The large intestines of the same contained,

Oxygen gas	0·00
Carbonic acid gas	24·39
Pure hydrogen gas	19·11
Carbonated hydrogen, with some traces of carburetted hydrogen gas	5·47
Azotic gas	51·03
Total	100·00

"In a third series of experiments, made upon a subject twenty-three years of age, who had eaten the same food, and at the same time, we found, in the small intestines,

Oxygen gas	0·00
Carbonic acid gas	40·00
Pure hydrogen gas	51·15
Azotic gas	8·85
Total	100·00

" In the large intestines we met with,

Oxygen gas........................	0·00
Carbonic acid gas..................	70·00
Pure and carbonated hydrogen gases..............................	11·60
Azotic gas...........................	18·40
Total......	100·00

" The stomach contained only a very small portion of gas, which it was impossible to analyse.

" The subject of the fourth series of experiments was a young man twenty-eight years of age, who, four hours previous to his execution, had eaten some bread, boiled beef, and lentils, and drank some red wine.

" His small intestines contained,

Oxygen gas........................	0·00
Carbonic acid gas..................	25·00
Pure hydrogen......................	8·40
Azotic gas...........................	66·60
Total......	100·00

" In this individual we analysed separately the gases contained in the cœcum, and those in the rectum.

" The cœcum contained,

Oxygen gas........................	0·00
Carbonic acid gas..................	12·50
Pure hydrogen gas................	7·50
Carbonated hydrogen gas........	12·50
Azotic gas...........................	67·50
Total......	100·00

" The rectum contained,

Oxygen gas........................	0·00
Carbonic acid gas..................	42·86
Carbonated hydrogen gas........	11·18
Azotic gas...........................	45·96
Total......	100·00

" Some traces of hydrogen gas manifested themselves upon the mercury before the experiment.

" These results, which may be depended on, as nothing has been neglected to insure correctness, agree very well with those of M. Jurine, as far as regards the nature of the gases; but they invalidate what this learned Physician says regarding the proportion of the carbonic acid gas, which, according to him, goes on decreasing from the stomach to the rectum. We have demonstrated on the contrary, that this gas is generally more abundant in the large intestines than in the stomach or the small intestines."

V.—We conceive an apology to be almost necessary for not having sooner presented our readers with a translation of the following highly interesting paper, by *M. Figuier, on the Precipitation of the Oxide of Gold by Potash, and the Medicinal Exhibition of the Triple Muriate of Gold and of Soda*[*].

"The anomalies which attend the precipitation of the oxide of gold by potash, are undoubtedly the causes of the various results obtained by chemists who have examined them. This is evident from the perusal of the essays which have appeared on this subject, particularly since M. Chrestien published his observation on the medicinal properties of different auriferous preparations. M. Vauquelin[†] asserts, that, at a low temperature, this oxide is not precipitated by caustic potash, sub-carbonate of potash, soda, barytes, or lime: and Duportal and Pelletier[‡] confirm this assertion. On the contrary, M. Oberkampf has obtained a precipitate by pouring these bases, at a low temperature, into a solution of muriate of gold: and this chemist states as a fact what M. Vauquelin only supposes to be the case, that the triple salts of gold are not decomposed by the addition of these bases, nor even by ammonia[||]: and all the writers agree in maintaining, that a very acid solution of muriate of gold is not precipitated by the alkalies in any temperature. In publishing an account, however, of the auriferous preparations employed by M. Chrestien[§], I announced, when noticing the treatment of the oxide of gold by potash, some facts which are at variance with the statements of these chemists. This diversity amongst such distinguished chemists, justifies the remark of the celebrated Proust in his Essay, published in the *Journal de Physique*, upon the difficulties of obtaining the oxide of gold by potash, and the likelihood of these leading into errors the pharmacopolists, who are obliged to prepare this oxide for medicinal purposes. I consider it of some importance to settle this point, and to make generally known an easy process for the preparation of this oxide, which is daily coming more into use as a medicine. But this process being connected with the experiments which I made to controvert those of Vauquelin and Oberkampf, I ought in the first place to relate them.

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[*] *Journal de Pharmacie et des Sciences Accessoires*, No. vi. Juin 1816, p. 242.

[†] *Annales de Chimie*, tome lxxvii. [‡] *Ibid*, tome lxxviii.

[||] *Ibid*, tome viii. [§] *Bulletin de Pharmacie*, tome iii.

"According to these chemists, a very acid solution of muriate of gold is not precipitated by the alkalies. The following experiments prove that this is a mistake:

"Six grammes of dried muriate of gold being dissolved in 150 grammes of distilled water, the filtered solution was divided into two equal parts, and put into two conical glasses; into one I mixed four grammes of muriatic acid, and saturated both, at a low temperature, with caustic potash dissolved in water. The yellow colour of the solutions changed to a deep red; in a short time the fluid became turbid, and a flocculent precipitate of a grey colour was thrown down. These precipitates gradually increased and deepened in colour for forty-eight hours; at which time they appeared to have attained their maximum of increase and colour. I observed no difference between them, except that the acid muriate required a greater quantity of potash for its precipitation; and in both, that an excess of potash was requisite for procuring copious precipitates. After having filtered the fluids, I put them into small mattrasses, and on exposing them to a moderate heat, new and deeper coloured precipitates were formed, which I mixed with the others (washing the whole with pure water) and dried them. In this state they weighed two thirds of the weight of the gold which was dissolved; that obtained from the acid solution differing from the other only one decigramme in weight. The fluids which had furnished these precipitates still contained gold; they changed to a yellow on the addition of muriatic acid, and yielded new precipitates with potash, although there was an excess of acid before the alkali was added. By thus treating them alternately with potash and muriatic acid, I obtained all the gold contained in the muriate. If after the precipitate is produced a quantity of muriatic or nitric acid, sufficient to saturate the potash, be added to the filtered liquid, the yellow colour is developed; and on evaporating it, yellow crystals, having the geometrical figure of the alkaline salt, are obtained. This salt, dissolved in water, gives a solution of a yellow colour, which affords oxide of gold when treated with any of the alkalies. I made a similar experiment, employing sub-carbonate of potash in place of caustic potash, and obtained the same results, except that the precipitates were not so copious, and less coloured; but, when assisted by time and heat, they presented the same phenomena.

"These experiments, which were frequently repeated, prove, that a very acid muriate of gold affords nearly the same precipitates as one that is less acid; but the oxide of gold is not so soluble in the alkalies as is generally believed. It appears to me, that the alkalies act in the following manner upon the muriates of gold. The first molecules saturate the acid which the muriate contains; the second form a salt with a double base by their union with the neutral muriate of gold, which is partly decomposed by an excess of acid, and oxide of gold is thrown down. This opinion is verified by what occurs when potash is added to the aqueous solution of muriate of gold. The first addition cautiously made produces no change; but by further additions, the fluid loses its yellow colour and the triple salt is formed; after which, by adding the potash in excess, it changes to a deep red, and in a short time the precipitate begins to appear. It becomes more abundant and deeper in colour according as the triple salt is decomposed, which is generally very slowly at the ordinary temperature of the air; but more active and complete if the fluid be heated to the boiling point; hence, after a precipitate has been formed at a low temperature, a second deeper coloured is procured by heating it.

" *Of the Triple Salts of Gold.*—According to M. Oberkampf, these salts may be decomposed by the same bases. The oxide of gold which I obtained by decomposing a very acid solution of muriate of gold by potash, led me to form a contrary opinion; on which account I repeated the experiments of that chemist. Taking five grammes of concrete muriate of gold, I dissolved them in two hundred grammes of pure water; and dividing the solution into five equal portions, put them into conical glasses. In the first I dissolved five decigrammes of muriate of potash; in the second, the same weight of muriate of soda; in the third, muriate of barytes; in the fourth, muriate of ammonia; and in the fifth, muriate of lime. These liquors were each filtered; and I added to the three first an aqueous solution of their alkaline base. The fifth was mixed, in a corked flask, with two hundred grammes of lime water. All the four preserved their transparency for an hour, after which they began to display signs of decomposition, by the appearance of a flocculent cloud, which soon precipitated: their colour was at first pale; but after forty-eight hours the precipitates became very abundant, and of a deep grey hue, except that with barytes, which was always of abrick colour: whereas the fourth, which was instantaneously and copiously precipitated by ammonia, had the colour of fulminating gold. At the end of three days I separated the precipitates and exposed all the fluids, except the fourth, to a gentle heat; a new precipitate was formed in each of a deeper colour than the first. The supernatant liquor still shewed the presence of gold. All these experiments were repeated, employing equal parts of muriate of gold and alkaline muriate. In exposing the solutions to a gentle heat, the decomposition was prompt, and the precipitate more abundant and deeper coloured. In these experiments I constantly remarked that an excess of alkali, instead of lessening the precipitate, always increased it. I cannot explain how my results differ so materially from those of M. Oberkampf; but whoever repeats my experiments, will observe the phenomena which I have described.

" The triple salts are not only decomposed by the same bases, but also by different bases; and muriate of gold and of soda may be decomposed by potash as well as by lime. Thus there are two methods of obtaining oxide of gold. The first consists in dissolving one part of concrete muriate of gold, in eighty parts of distilled water, precipitating its oxide by caustic potash, then separating the precipitate after forty-eight hours, and heating the fluid to procure a second precipitate, which may be separated by the filter, and the filtered fluid treated anew by muriatic acid and potash. The second method is to dissolve in a small quantity of water three grammes of dry muriate of gold, or six grammes of triple muriate of gold and soda, to mix this solution with a litre of lime water in a corked flask; and forty-eight hours after the mixture has been effected, to separate the precipitate, and expose the liquor to the action of heat which will throw down a second precipitate, that may be united with the first by another filtration. The fluid still contains gold; which may be obtained in the state of oxide, by evaporating to dryness, washing the residuum with water to deprive it of the muriate of lime which it contains, and treating it afterwards with hot distilled vinegar, which dissolves the oxide of gold and some of the carbonate of lime. What resists the action of the distilled vinegar, is metallic gold. The acetic solution of gold being carefully evaporated to dryness, the salt is to be afterwards dissolved in lime water which separates the gold in the state of oxide. But without evaporating the lime water which furnishes the two first precipitates, the gold may be separated in the metallic state by a solution of proto-sulphate of iron. This divided gold may be administered according to M. Chrestien's method, or serve for subsequent operations.

" In mentioning the precipitation of gold by potash, I stated that the fluid, after the oxide is thrown down, becomes yellow by the addition of muriatic acid; and when evaporated, yields a muriate of potash of a yellow colour; or a nitrate, if nitric acid has been employed. These salts are mixed with a small quantity of triple salt of gold and of potash; and if the whole be dissolved in lime water, the triple muriate of gold and potash is decomposed, and oxide of gold precipitated.

" From these observations we may conclude: 1. That a very acid solution of muriate of gold may yield, with potash, a quantity of oxide of gold, nearly as great as a less acid solution. 2. That the triple salts of gold are decomposible by the same bases added in excess. 3. That they are decomposed also by different bases added in excess. 4. That of all the alkaline bodies, lime is that one, which, in an equal weight, decomposes the greatest quantity of neutral muriate of gold.

"*On the Medicinal Preparation and Exhibition of Muriate of Gold.*—In order that medicines produce the effect upon the human body which is expected from them, they should always be prepared in the same manner. This remark, applicable to all compound medicines, is particularly so to those which exert an energetic action; such as the muriate of gold and of soda, the most stimulant and useful of all the auriferous preparations introduced by Dr. Chrestien; and this consideration has led me to offer some remarks on its preparation and employment. This salt ought to be very homogeneous; therefore, when, during its preparation, a saline pellicle appears on the surface of the fluid, it should be constantly removed with a glass spatula until the evaporation be completed. The desiccation should be finished in a glass or porcelaine mortar placed in a sand-bath at a moderate heat, and the salt pulvérized as fast as it dries with a pestle of the same material as the mortar; thus dry and pulvérized, it should be put into a glass-stopped bottle previously warmed. The same precautions are requisite in the preparation of pure muriate of gold.

"In exhibiting the triple muriate, it should be mixed with two parts of oris root powder. I have remarked that when this mixture is kept, it changes colour, and becomes grey, particularly when the salt and the vegetable powder are not very dry. This change of colour announces a beginning decomposition of the auriferous salt: humidity favours this decomposition; and hence the necessity of drying, perfectly, both these substances before they are mixed. It is also necessary that the Florentine oris powder, or any other vegetable powder employed, be freed from its extractive and gummy principles; which may be done by macerating them in alcohol, and then in hot water, which also takes up the greater part of any earthy salts contained in them. When treated in this manner, well pulverized, dried, and accurately mixed with the triple muriate of gold, no alteration of the salt takes place; and the mixture may be preserved unchanged for a great length of time, and consequently retaining its medicinal properties.

"As pure muriate of gold attracts powerfully the humidity of the atmosphere, it presents more difficulties in its administration than the triple muriate. The mode which I adopt when it is prescribed as an internal remedy, is to dissolve it in a known proportion of distilled water. For this purpose I dissolve sixteen grains of the salt in one ounce of water, and preserve the solution in a glass phial, secluded from the light. Half a drachm, which contains a grain of the muriate, may be made into pills, by the addition of a sufficient quantity of starch, or mixed with a greater quantity of water, when it is to be taken in a fluid form."

PART V.

MEDICAL AND PHYSICAL INTELLIGENCE.

I.—SOCIETIES.

The Society for Relief of the Widows and Orphans of Medical Men in London and its Vicinity, held its Half-Yearly General Court on Wednesday, October 2d, 1816; when the Annual Election of Officers and Directors took place, and the following Gentlemen were elected for the ensuing Year.—President: Dr. Baillie.—Vice-Presidents: Sir Francis Milman, Dr. Haworth, Sir Gilbert Blane, Dr. Dennison, Sir William Blizard, Mr. Heaviside, Mr. Ware, Mr. Norris, Mr. Rendall, Mr. Haworth, Mr. Ridout, Mr. Simons.—Treasurers: Dr John Sims, Mr. Upton, Mr. Steele. —Directors: *Physicians,* Dr. Merriman, Dr. Outram, Dr. Maton, Dr. Warren, Dr. Frampton, Dr. Farre, Dr. Adams, Dr. Laird: *Surgeons,* Mr, Keate, Mr. Edward Browne, Mr. Vincent, Mr. Cartwright, Mr. Copeland, Dr. Burrows, Mr. Charles Clarke, Mr. Andrew Matthias: *Apothecaries,* Mr. Atkinson, Mr. Seaton, Mr. Malim, Mr. Wells, Mr. Tegart, Mr. John Simpson, Mr. Wheeler, Mr. Hunter.—Secretary: Mr. William Chamberlain, Aylesbury Street.—Collector: Mr. Hunt, St. Martin's Street, Ludgate Hill. —This Society was instituted in the year 1788. *Its Capital is now* TWENTY-THREE THOUSAND SIX HUNDRED POUNDS Three per Cent. Consolidated Bank Annuities, and TWO HUNDRED POUNDS Navy Five per Cents. out of the Interest ot which, down to the 18th of September in the present year, the Sum of *Five Thousand Two Hundred and Eighty-two Pounds* has been distributed among the Widows and Orphans of *deceased Medical Men,* Members of this Society, many of whose Families had been left without any provision.

The Society for the Benefit of Widows and Orphans of Officers of the Hospital and Regimental Medical Staff of the Army, has published its first Report. This Society was established the 22d of December 1815, and the following Officers were elected.—President: Francis Knight, Esq.—Vice Presidents: Sir Walter Farquhar, Bart. Sir Everard Home, Bart. Sir

James MacGrigor, Knt. Dr. Charles Kerr, Dr. William Franklin, John Calvert Clarke, Esq.—Committee of Management: Dr. Benjamin Moseley, Dr. William Pym, George J. Guthrie, Esq. Dr. Charles F. Forbes, Robert Stewart, Esq. W. R. Morel, Esq. J. Dease, Esq. — This Society has for its first object the creation of a capital, the interest of which shall be adequate to pay the stipulated yearly pensions to the Widows of Contributors. The next object is to extend the benefits of the Fund to the Orphans of Contributors, as soon as this can be accomplished without detriment to the Widows. The sum of money already accumulated has enabled the Managers to purchase £1671 : 10 : 9 in the 3 per Cent. Stock; and there is as much now receivable as will, at the present rate of that Stock, purchase £800 more, making £2471 : 10 : 9 in the 3 per Cents. the increase of which will be the more rapid, from a resolution recently entered into of freeing the Fund from the expenses of management by a voluntary subscription. The number of Subscribers already amounts to 260: and it is to be observed, that, as the Fund in possession of the Society has accrued almost exclusively from Officers of the Medical Staff in Great Britain, a very important accession of numbers may be expected from the East Indies, Ceylon, the Isle of France, the Cape of Good Hope, St. Helena, the numerous Islands in the West Indies, Canada, and France. — From the countenance the Institution has experienced in its commencement, which is even at this early stage sufficient to ensure success, there is every ground of confidence in the result.

New Rupture Society. — The number of patients hitherto relieved by this Charity, is 7100, most of whom were totally destitute of the necessary Apparatus for their personal safety. The following comparative statement shews the proportion and species of herniary cases occurring in each sex:

		Males.	*Females.*
Ruptures	In both groins	1633	28
	In both thighs	6	61
Inguinal	On the right side	2644	85
	On the left side	1427	67
Femoral	On the right side	32	215
	On the left side	24	145
	Navel ruptures	51	298
	Ventral herniæ	7	20
	Intestinal prolapses	33	39
	Uterine prolapses	0	214
	Prolapse of the urinary bladder	0	1
		5927	1173

II.—PHYSIOLOGICAL.

Temperature of the Human Body.—Dr. J. Davy, in a letter to his brother Sir Humphrey Davy, dated Cape Town, May 18, 1816, thus states his observations on this subject, made within the tropics: — " The temperature of the human body has also occupied my attention; and the observations I have made seem to me interesting, and particularly as shewing how long exposure to heat predisposes to febrile affections, by augmenting the temperature of the system; I must barely state my results without further comment. In Europe, the average temperature of the human body is 96°: in most on board it was no higher out of the tropics: under the line it had increased one degree: and in about 12° South, it was augmented to nearly 100°.

Craniology.—Prof. *Meckel* examined the size of the foramen lacerum of 226 skulls, in order to ascertain whether the assertion of Dr. *Authenreith*, that the cerebral veins of the right side preponderate in general, and particularly in females, above those of the left side; and whether, therefore, the foramen lacerum of that side, which transmits the larger cerebral veins, be constantly more capacious. Fifty-two of these skulls were decidedly belonging to females, and sixty-one to males. The sex to which the remainder belonged could not be ascertained. The following were the results. In thirty-five of the female skulls the right foramen was found largest; in nine, the left foramen; and in eight they were both alike. In thirty-three of the male the right, and in nineteen the left was found wider; and in nine both were of the same size. Among those the sex of which was not ascertained; in seventy-four the right was the largest, in fifteen the left, and in twenty-four they were alike. Consequently, Dr. Authenrieth's opinion was confirmed; with the sole limitation, that, both in males and females, the right foramen is larger; but that the reverse is more common in men than in women.

III.—THERAPEUTICAL.

Dulcamara.—Hufeland has found that the Stipites Dulcamaræ, in combination with the pulvis Plummeri, antimonium crudum, and guaiaic, in a strong decoction, and in doses of from one to two ounces a day, are very efficacious in Herpes. He thinks it wrong to apply this remedy in infusion, as its shews its whole power only in strong decoction.

Urinary Calculus dissolved in the Bladder.—In a communication published in the last Number of the Philosophical Magazine, Mr. I. T. Cooper states, that having discovered that a calculus in the bladder consisted chiefly of carbonate of lime, he dissolved it completely in eleven days, by every day injecting into the bladder "two drachms of muriatic acid diluted with eight ounces of water, heated to about 100°. The acid, during the whole period, came away nearly neutral."

Sedative Solution of Opium.—The following letter has been handed to us by Mr. Battley; and as we consider the preparation to which it refers an object of considerable practical importance, we have no hesitation in inserting it.

"*To the Editors of the London Medical Repository.*

"GENTLEMEN, I observed in the last Number of the *Repository* an invitation to practitioners to communicate their observations on the *Liquor Opii Sedativus.* As that preparation has been in the hands of the higher ranks of the profession for some time, and having had frequent communications from them of its effects, I shall take an early opportunity of embodying a large mass of evidence collected from this source, and lay it before the Faculty through the medium of the medical journals. In the mean time I will merely observe, that it is a preparation which combines all the sedative properties of opium, without any of its baneful effects.

"The simple resin of opium, in a solid form, is also deserving of attention. I remain, &c. &c.

28th October, 1816. RICHARD BATTLEY."

IV.—CHEMICAL.

Hepatic Gas Baths.—Dr. *Gebhard* has recently published an Account of the Gas and Mud Baths, situated near the Sulphur Springs at *Eilsen*, and which are now in very general use.

The chief advantages Dr. *Gebhard* says they possess, are, that they are more easily applicable than the pneumatic apparatus in pulmonary and cutaneous complaints, and general cachexy. The gas is said to be a mixture of carbonic and hepatic gases. As a bath, they moderately increase the heat of the body, promote gentle perspiration, decrease the frequency of the pulse, and relieve dry irritating coughs; as well as being of great use in diseases of the skin. Various other virtues are ascribed to these baths.—*Hufeland's Journal.*

Plutonium.—This name has been given to the metal of barytes, by Dr. Clarke of Cambridge, who obtained it by exposing barytes, mixed with lamp oil, to the heat of an ignited stream of two parts of hydrogen gas and one of oxygen, emitted from Newman's blowpipe. The metal has the colour and lustre of silver, admits of being filed, and is not immediately oxydized on exposure to the atmosphere.— Notwithstanding what we were led to state in our note on Mr. Edwards' paper (p. 376), we have been informed, since writing it, that Dr. Clarke's blow-pipe has exploded.

Seltzer Water.—For the latest analysis of the Seltzer medicinal waters, we are indebted to the celebrated chemist Mr. *Westrumb.* The depth of the well, from its surface to the bottom, is twelve French feet, and the lumen of the basin contains 108 cubic inches. The well supplies in each minute 1000 Paris cubic inches. In 1787, on clearing out the basin, it required two hours and a half to attain its full and former height. In 1793 it only required one hour 48 minutes and 23½ seconds to replenish it. The temperature of the water is almost constantly the same; viz. from 63° to 64° Faht. Its specific gravity is 1,003,693441.—According to the analysis made remote from the well, one pound of Seltzer water contains,

Crystallized muriate of soda	$18\frac{11}{20}$	grains.
——— soda	$16\frac{70}{100}$	
Carbonate of lime	$2\frac{13}{25}$	
——— magnesia	$1\frac{67}{100}$	
Carbonated oxyd of iron	$\frac{3}{25}$	
Silicious earth	$\frac{6}{25}$	
	$39\frac{77}{100}$	

The analysis made after another method gave, in 100 cubic inches,

Crystallized muriate of soda	$98\frac{3}{16}$	grains
——— soda	97	
——— sulphate of soda	$4\frac{15}{16}$	
Carbonate of iron	$\frac{3}{4}$	
——— lime	$14\frac{1}{4}$	
——— magnesia	$8\frac{3}{4}$	
Silicious earth	$1\frac{1}{4}$	
	$225\frac{318}{408}$	
Carbonic acid gas	124	cubic inches.

It has been calculated that more than one million six thousand bottles of Seltzer water are annually exported, which require almost one million and a half of corks, 25,000 pounds of pitch, 26,000 hides of leather, 1500 pounds of packthread, and 50 loads (*klaftes*) of wood for melting the pitch; there are besides 55,000 new bottles broken and unfit for sale.

V.—BOTANICAL.

Germination of Leaves.—That the leaves of many plants are susceptible of germination is well known. M. Cassini, in a paper published in the *Journal de Physique* for May last, states, that he has often observed this take place in the petioles of the terminal leaflets of the radical leaves of Cardamine *pratensis*, which change their tubercles into a real bud, shooting forth a stalk with leaves upwards, and a real root downwards.

Agave.—A new species of *Agave* has lately flowered in the garden of the Duke of *Litta* at *Lainate*, near Milan. It has been described in the *Bibliotheca Italiana*, by *Signore Guiseppe Tagliabue* as a new genus, but it is undoubtedly an Agave. A description and plate of the plant is given in the last Number of the Journal of Science and the Arts.

VI.—LITERARY INTELLIGENCE.

Mr. Pettigrew is preparing for publication, Memoirs of the Life and Writings of the late John Coakley Lettsom, M. & LL.D. &c. with a Selection from his Correspondence with the principal Literati of this and Foreign Countries.

Mr. John Howship has in the press, Practical Observations in Surgery and Morbid Anatomy, illustrated by Cases, with Dissections and Engravings.

Dr. Henry Smith of Salisbury, intends publishing in January next the First Number of his *Flora Salisburiensis;* which is to be continued monthly. Dr. S. proposes to embrace the whole of the British Flora; and to adapt his works as well to the purposes of a Family Herbal as to the instruction of the Medical Student.

Mr. John Mason Good has in the press, a Physiological System of Nosology, with a Simplified and Corrected Nomenclature.

Shortly will be published, a Compendium of Medical Surgery, translated and abridged from Depelch's Elementaire des Maladies.

A METEOROLOGICAL TABLE,

From the 21st of September to the 20th of October, 1816,

KEPT AT RICHMOND, YORKSHIRE.

230 Miles NW from London.

D.	Barometer.		Therm.		Rain Gage.	Winds.	Weather.
	Max.	Min.	Max	Min.			
21	29 43	29 38	58	48	08	SE.	1 Cy.. 4 Rain.
22	29 54	29 52	60	50	03	NE.	1 Rain.
23	29 54	29 49	58	50	08	NE.	1 Rain.
24	29 64	29 49	67	39		E.	1 Mist... 2 Sun..
25	29 77	29 75	63	43		W.	1 Sun...
26	29 77	29 75	64	41		SW..	1 Sun.. 3 Rain. 4 Starl..
27	29 74	29 51	62	48		SW..	1 Sun..
28	29 51	29 40	60	47		SW...	1 Cy.. 2 Sun..
29	29 16	29 71	55	39	67	SE.SW...	1 Cy.. 2 R.... 3 S.. 4 Sh. & Mn..
30	29 30	29 03	55	38		SW..	1 Sun..
1	29 19	29 19	55	46	30	SE.NE.NW.	1 Rain... 3 Sun.
2	29 49	29 37	53	37	30	Vble.	1 Rain... 3 Cy.. 4 Mn..
3	29 49	29 49	58	43		S.	1 3 4 Cy.. 2 Sun.
4	29 49	29 49	56	47	06	NE.SE.	1 Rain.
5	29 49	29 44	63	54	07	NE.SE.	1 3 Mist.. 2 Sun.. 4 R.
6	29 64	29 58	65	48	01	Vble.	1 3 Mist.. 2 Sun... 4 R.
7	29 72	29 70	54	44		NE.	1 Rain.. 2 Cy...
8	29 74	29 72	51	45	34	NE.	1 Rain...
9	29 73	29 73	57	47		NE.	1 Cy...
10	29 66	29 62	57	47	02	NE.	1 Mist... 3 Rain. 4 Mn...
11	29 70	29 70	62	50		W.WNW.	1 Sun... 3 Cy...
12	29 72	29 70	62	57		WSW.	1 3 4 Cy... 2 Sun..
13	29 68	29 63	60	50		E.SW.	1 Sun.
14	29 75	29 73	61	43		WSW..	1 Cy.. 2 Sun..
15	29 76	29 71	60	49		SW..	1 Sun..
16	29 55	29 44	57	47		SE.	1 Cy... 4 Rain.
17	29 44	29 41	55	38	03	W..	1 Sun.. 4 Rain.
18	29 51	29 41	53	39		W..	1 Sun...
19	29 20	29 20	55	38		SW...	1 Sun. 2 Sh. 4 Starl....
20	29 33	29 26	59	39		W...	1 Sun...

THE quantity of rain during the month of September was 1 inch 75-100ths.

* * *

Observations on Diseases at Richmond.

There has been no prevailng diseases in this period. Hooping Cough and Chicken Pox have appeared in a few instances. Cases of the following complaints have been under treatment:—Cynanche Tonsillaris, Dyspepsia, Erysipelas, Febris simplex, Gastrodynia, Menorrhagia, Obstipatio, Pneumonia, and Scarlatina.

METEOROLOGICAL TABLE FOR LONDON,

From the 20th of SEPTEMBER, to the 19th of OCTOBER, 1816,

By Messrs. HARRIS & Co.

Mathematical Instrument Makers, 50, High Holborn.

M.	D.	Therm.			Barom.		Rain Guage	De Luc's *Dry.*	Hygrom. *Damp.*		Winds.		Atmo. Variation		
	20	57	63	49	30^1	29^9			2	1	E	ENE	Fine	—	—
◐	21	57	64	45	29^8	29^7			1	7	ENE	NE	Clo.	Fine	—
	22	55	61	47	29^5	29^7			9	10	NE	N	Fine	—	—
	23	54	60	51	29^8	28^8			10	10	NE	E	Fine	—	—
	24	54	62	50	29^9	30			9	9	NE	ENE	Fine	—	—
	25	52	62	49	30	29^9			5	5	E	S	Rain	Clo.	—
	26	52	61	47	29^9	29^6	14		5	5	SE	S	Rain	—	—
	27	51	61	50	29^5	29^6	12		7	7	SW	W	Clo.	—	—
	28	53	62	47	29^3	29^3	06		8	8	Wva	WNW	Rain	Fine	Clo.
○	29	54	62	49	29^5	29^6	08		10	10	S	S	Rain	Fine	Clo.
	30	55	64	51	29^5	29^4	19		10	10	SW	WSW	Rain	—	—
	1	54	60	50	29^4	29^7	10		10	11	SSW	SW	Rain	—	Clo.
	2	56	57	50	29^7	29^6	09		13	12	NWva	N	Rain	Clo.	Rain
	3	53	60	50	29^8	29^9	05		15	15	SSW	S	Rain	Clo.	Fine
	4	53	62	54	29^9	29^9	04		15	15	S	SSE	Fine	—	Fog
	5	60	62	58	29^9	29^8			15	17	S	SE	Clo.	—	Rain
◑	6	60	64	59	29^8	29^8	14		18	18	S	NE	Fine	Rain	Clo.
	7	60	66	59	29^8	29^8	04		20	20	E	ENE	Rain	Clo.	—
	8	59	61	56	29^9	30	03		19	20	SW	ENE	Clo.	—	—
	9	57	60	56	30	30			15	13	E	E	Clo.	—	—
	10	57	59	56	30	30	14		14	14	S	SSW	Fine	—	—
	11	56	58	51	30	30^1			14	13	Wva	NNW	Fine	Rain	Fine
	12	52	56	52	30^1	30^1	16		12	12	NNE	NW	Clo.	Fine	—
	13	53	56	51	30^1	30^1			12	12	SE	SE	Fog	Clo.	—
	14	50	54	50	30^1	30^1	10		10	9	S	SSE	Fine	—	Clo.
●	15	48	52	50	30^1	30^1			10	10	E	SE	Fog	Fine	Fog
	16	48	54	37	30^1	30	04		10	12	E	SE	Fog	Clo.	Fog
	17	47	53	45	29^8	29^8	15		13	12	SSW	W	Rain	—	Clo.
	18	47	55	46	29^8	29^9	21		12	10	W	SSW	Fine	—	—
	19	47	54	45	29^9	29^7	15		9	10	WSW	SW	Fine	Rain	Clo.

The quantity of rain during the month of September, is 1 inch 83-100ths.

BILL OF MORTALITY *from September* 17 *to October* 22, 1816.

		Sep. 24.	*Oct.* 1.	*Oct.* 8.	*Oct.* 15.	*Oct.* 22.	
CHRISTENED.	Males	184	233	233	211	158	
	Females	205	212	211	199	165	
		389	445	444	410	323	Total, *(five weeks)* 2011.
BURIED	Males	122	188	169	170	99	
	Females	147	160	159	145	125	
		269	348	328	315	224	Total, *(five weeks)* 1484.
OF WHOM HAVE DIED	Under 2 Years	80	95	104	100	60	
	Betw. 2 and 5	26	46	31	32	25	
	5 and 10	16	14	12	10	11	
	10 and 20	12	9	9	14	9	
	20 and 30	24	24	22	28	21	
	30 and 40	23	24	23	22	28	
	40 and 50	26	30	30	32	21	
	50 and 60	26	36	28	19	18	
	60 and 70	20	30	28	23	15	
	70 and 80	17	22	27	25	12	
	80 and 90	8	15	12	9	4	
	90 and 100	1	3	2	1		
SMALL POX		12	17	13	14	12	

Total of Small Pox...*(five weeks)*...68.

A REGISTER OF DISEASES

Between SEPTEMBER 20th, and OCTOBER 19th, 1816.

DISEASES.	Total.	Fatal.	DISEASES.	Total.	Fatal.
Abortio	16		Eneuris	2	
Abscessio	24		Enteritis	3	
Acne	5		Entrodynia	21	
Amaurosis	1		Epilepsia	7	1
Amenorrhœa	32		Epistaxis	11	
Amentia	1		Erysipelas	21	
Anasarca	28	1	Erythema *lave*	1	
Aneurisma	1		——— *nodosum*	1	
Angina Pectoris	1		Febris *intermittent*	11	
Anorexia	3		—— *catarrhalis*	33	
Aphtha *lactentium*	15		—— *Synocha*	6	
——— *anginosa*	1		—— *Typhus mitior*	15	
Apoplexia	10	5	—— *Typhus gravior*	4	
Ascites	9	2	—— *Synochus*	28	
Asthenia	28		—— *Puerpera*	1	
Asthma	39	2	—— *remit. Infant*	23	1
Atrophia	3		Fistula	5	
Bronchitis *acuta*	3		Furunculus	8	
——— *chronica*	5		Gastrodynia	26	
Bronchocele	4		Gonorrhœa	22	
Calculus	2		Hæmatemesis	2	
Cancer	6	2	Hæmoptöe	12	
Carbunculus	1		Hæmorrhois	22	
Cardialgia	13		Hemiplegia	4	1
Carditis	1		Hepatalgia	6	
Catalepsia	1		Hepatitis	19	1
Catarrhus	73		Hernia	2	
Cephalalgia	24		Herpes *Zoster*	2	
Cephalæa	12		——— *labialis*	5	
Chlorosis	12		——— *præputialis*	2	
Chorea	4		Hydrargyria	2	
Cholera	20		Hydrocele	2	
Colica	28		Hydrocephalus	11	8
—— *Pictonum*	11		Hydrothorax	5	3
Convulsio	14	2	Hypochondriasis	7	
Cynanche *Tonsillaris*	35		Hysteralgia	4	
——— *maligna*	2	1	Hysteria	22	
——— *Trachealis*	6	3	Hysteritis	1	
——— *Parotidea*	12		Icterus	8	
Delirium Tremens	1		Impetigo *erysipel.*	2	
Diabetes.	3		Ischias	2	
Diarrhœa	67		Ischuria	6	
Dysecöea	1		Lepra	2	
Dysenteria	12	1	Leucorrhœa	22	
Dyspepsia	78		Lithiasis	1	
Dyspnœa	17		Lumbago	5	
Dysphagia	1		Mania	8	
Dysuria	8		Melancholia	7	
Ecthyma	3		Menorrhagia	18	
Eczema	3		Morbi *Infantiles**	114	3

DISEASES.	Total.	Fatal.	DISEASES.	Total	Fatal.
Morbi *Biliosi**................	54		Psoriasis *inveterata*...	7	
Nephralgia......................	2		Purpura *humorhalis*.......	1	
Nephritis.......	2		Pyrosis.............	3	
Neuralgia......	3		Rheumatismus *acutus*......	23	
Obstipatio........	37		——— *chronicus*...	46	
Odontalgia....................	27		Roseola........................	1	
Opththalmia..	23		Rubeola	31	2
Otalgia........................	1		Scabies...	52	
Palpitatio......................	7		Scarlatina *simplex*..........	18	
Paralysis......................	15		——— *anginosa*.........	5	1
Paronychia	7		——— *maligna*.........	2	
Pemphigus.....................	1		Scirrhus........................	3	1
Peripneumonia....	20	1	Scrofula........................	13	1
Peritonitis	6		Spasmi...	15	
Pertussis..............	13	1	Strictura......................	4	
Phlegmasia *dolens*..........	5		Strophulus *intertinctus*...	6	
Phlogosis......................	8		Sycosis *menti*........	1	
Phrenitis.......................	1	1	Syphilis...	31	
Phthisis *Pulmonalis*........	35	17	Tabes Mesenterica.........	10	
Plethora........................	8		Tympanites..................	2	
Pleuritis.......................	11		Vaccinia......................	40	
Pleurodyne.....................	7		Varicella......	12	
Pneumonia.....................	23	3	Variola.........................	47	14
Podagra..............	9		Varicocele...................	1	
Pompholyx *benignus*.......	5		Vermes................	28	
Porrigo *larvalis*............	3		Vertigo.......................	16	
——— *decalvans*..........	2		Urticaria *febrilis*...........	10	
——— *scutulata*............	3		——— *evanida*..........	1	
——— *favosa*	2		——— *tuberosa*.........	2	
Prolapsus......................	1				
Prurigo *mitis*................	3		Total of Cases	2056	—
——— *senilis*..............	3				
Psoriasis *guttata*...........	2		Total of Deaths.............	......	79

* *Morbi Infantiles* is meant to comprise those Disorders principally arising from dentition or indigestion, and which may be too trivial to enter under any distinct heads; *Morbi Biliosi*, such Complaints as are popularly termed *bilious*, but cannot be accurately classed.

Observations on Prevailing Diseases.

If the mortality of the town be a criterion of its healthfulness, we may pronounce that the past month has not been very productive of diseases.

Although the usual autumnal *diarrhœa* has scarcely shewn itself this season, yet *colic* has, in several instances, been extremely violent.

Catarrhal fevers have been frequent and severe, and in many instances have required one bleeding; but they have rapidly given way, after the abstraction of ten or twelve ounces of blood and opening the skin by antimonials, to a course of brisk purging continued for two or three days.

The affections of the respiratory organs have been acute; and an unusual number of cases of *croup* have occurred, several of which were mortal. One was in a boy two years of age, who was attacked on the 25th of September with catarrhal symptoms, which, on the 27th, ended in *cynanche trachealis*. General and local bleeding, the warm bath, and blistering were prescribed, and twelve grains of calomel were given in six doses, one every second hour, which procured several dark coloured stools; but no mitigation of symptoms took place. The child died in forty-eight hours from the attack of croup. On inspecting the trachea and larynx, the lining membrane was found highly inflamed, with much frothy mucus; but there was no artificial membrane. The croupy sound, which characterizes this destructive complaint, was as audible as in those cases were coagulable lymph has been deposited. — Another case was also a boy two years and seven months old. Common catarrhal symptoms appeared on the 4th of October, and he died on the 9th. This case was treated as the former. In neither case was advice had till twelve hours after the croup was manifest.—A third had a favourable termination. The disease being in an infant three months old, who was attended to a few hours after the commencement of the symptoms. The Reporter of these cases observes, that in his practice, which has been extensive, he does not remember one recovery where the remedies were delayed eight hours after thr formation of the specific symptom.

The *small pox* is again extending its ravages. But it is still among the lowest orders of society, and chiefly with the poor Irish in Mary-la-Bonne Parish. In Calmel's Buildings eleven deaths out of twenty-four cases occurred, all of children under seven year of age. Petechiæ appeared in many instances; but the fatality was principally ascribed to the ignorance and obstinancy of the parents. Although destruction was spreading fast around, nothing could induce them to consent to vaccination.

We have heard also of six deaths in a Court in St. George's Parish from the same disease, which was introduced by inoculation. Two other cases of small pox were attended with similar symptoms to the above, and the children fell sacrifices to the same causes.

Pompholyx has lately appeared as an epidemic about Chelsea. It has readily yielded to calomel and gentle aperients, followed up by a light infusion of cinchona with sulphuric acid, and the daily use of the tepid bath. The best application to the broken vesicles, when they passed into sores, was found to be the common spermaceti ointment united with a twelfth part of extract of henbane.

Monthly Prices of SUBSTANCES *employed in* PHARMACY.

		S.	D.
Acaciæ Gummi elect.	lb.	5	0
Acidum Citricum - - -	-	30	0
—— Benzoicum -	unc.	6	6
—— Sulphuricum -	P. lb.	0	9
—— Muriaticum - -	-	1	8
—— Nitricum - -	-	4	0
—— Aceticum - -	unc.	3	0
Alcohol - - -	M. lb.	5	0
Æther sulphuricus - -	-	10	6
—— rectificatus - -	-	14	0
Aloes spicatæ extractum -	lb.	7	6
— vulgaris extractum -	-	5	0
Alumen - - -	-	0	6
Ammoniæ Murias - -	-	2	0
——— Subcarbonas -	-	4	0
Amygdalæ dulces -	-	4	6
Ammoniacum (Gutt.) - -	-	10	6
——— (Lump.) -	-	5	0
Anthemidis Flores - -	-	2	0
Antimonii oxydum - - -	-	7	0
——— sulphuretum -	-	1	0
Antimonium Tartarizatum	-	8	0
Arsenici Oxydum - - -	-	5	0
Assafœtidæ Gummi-resina -	lb.	3	6
Aurantii Cortex - -		4	0
Argenti Nitras - -	unc.	7	0
Balsamum Peruvianum -	lb.	34	0
Balsamum Tolutanum -	-	24	0
Benzoinum elect. - -	-	12	0
Calamina præparata - -	-	0	6
Calumbæ Radix - - -	-	4	0
Cambogia - -	-	10	0
Camphora - - -	-	8	0
Canellæ Cortex - -	-	5	0
Cardamomi Semina opt. -	lb.	12	0
Cascarillæ Cortex - -	-	4	0
Castoreum - - -	unc.	5	0
Catechu Extractum - -	lb.	3	6
Cetaceum - - -	-	3	6
Cera alba - - -	-	3	9
—— flava - - -	-	3	6
Cinchonæ cordifoliæ Cortex (yellow)		7	0
—— lancifoliæ Cortex (quilled)		10	0
—— oblongifoliæ Cortex (red)		10	0
Cinnamomi Cortex - -	-	17	0
Coccus (Coccinella) -	unc.	3	6
Colocynthidis Pulpa - -	lb.	30	0
Copaiba - - -	-	6	0
Colchici Radix - -	-	3	6
Croci stigmata - - -	unc.	6	6
Cupri sulphas -	lb.	1	2
Cuprum ammoniatum	-	10	6
Cuspariæ Cortex -	-	4	0
Confectio aromatica -	-	12	0

		S.	D.
Confectio Aurantiorum		3	6
— Opii		6	6
— Rosæ caninæ		2	0
— Rosæ gallicæ		2	0
— Sennæ		2	0
Emplastrum Lyttæ		7	0
— Hydrargyri		3	0
Extractum Belladonnæ	unc.	2	0
— Cinchonæ		3	0
— Cinchonæ resinosum		5	0
— Colocynthidis		3	6
— Colocynthidis comp.		2	0
— Conii		0	9
— Elaterii		30	0
— Gentianæ		0	6
— Glycyrrhizæ	lb.	5	0
— Hæmatoxyli	nc.	0	9
— Humuli		0	9
— Hyoscami	unc.	1	6
— Jalapæ 2*s.* 6*d.*	Res.	4	0
— Opii		3	6
— Papaveris		1	7
— Rhei		5	0
— Sarsaparillæ		1	6
— Taraxaci		0	9
Ferri subcarbonas	lb.	5	0
— sulphas		2	0
Ferrum ammoniatum		6	0
— tartarizatum		6	0
Galbani Gummi-resina		12	0
Gentianæ Radix elect		1	6
Guaiaci resina		7	6
Hydrargyrum purificatum		5	6
— præcipitatum album		9	0
— cum creta		6	6
Hydrargyri Oxymurias	unc.	0	9
— Submurias		0	9
— Nitrico-Oxydum		0	9
— Oxydum Cinereum		1	6
— Oxydum rubrum		6	0
— Sulphuretum nigrum		0	4
— — rubrum		0	9
Hellebori nigri Radix	lb.	3	6
Ipecacuanhæ Radix		17	0
Pulvis		19	0
Jalapæ Radix		5	6
— Pulvis		6	6
Kino		10	6
Liquor Plumbi subacetatis	M. lb.	2	0
— Ammoniæ		3	6
— Potassæ		1	6
Linimentum Camphoræ comp.		6	0
— saponis comp.		4	6
Lichen	lb.	1	6
Lyttæ		12	0
Magnesia		10	6
Magnesiæ Carbonas		4	0
— Sulphas, opt.		1	0
Manna optima		7	0
— communis		4	6
Moschus pod, (30*s.*)	in gr. unc.	48	0
Mastiche	lb.	7	0
Myristicæ Nuclei		20	0
Myrrha elect.		7	0
Olibanum		4	6
Opium (Turkey)		34	0
Opium (East India)			
Oleum Amygdalarum	lb.	4	0
— Anisi	unc.	3	0
— Anthemidis		6	6
— Cassiæ		9	0
— Caryophilli		6	6
— Carui		1	6
— Juniperi Ang.		5	0
— Lavandulæ		5	0
— Menthæ piperitæ	unc.	4	0
— Menthæ viridis Ang.		4	6
— Pimentæ	unc.	6	0
— Ricini optim.	(per bottle)	12	0

		S.	D.
Oleum Rosmarini	unc.	1	0
— Succini 2*s.* 6*d.* —	rect.	5	0
— Sulphuratum	P. lb.	1	6
— Terebinthinæ		1	4
— — rectificatum		3	0
Olivæ Oleum	cong.	18	0
— Oleum secundum		12	0
Papaveris Capsulæ	(per 100)	3	6
Plumbi subcarbonas	lb.	0	8
— Superacetas		2	6
— Oxydum semi-vitreum		0	9
Potassa Fusa	unc.	1	4
— cum Calce		0	6
Potassæ Nitras	lb.	1	0
— Acetas		10	6
— Carbonas		4	6
— Supercarbonas		1	6
— Sulphas		1	4
— Sulphuretum		2	6
— Supersulphas		1	0
— Tartras		4	0
— Supertartras		1	10
Pilulæ Hydrargyri	unc.	0	9
Pulvis Antimonialis		0	9
— Contrayervæ comp.		0	6
— Tragacanthæ comp.		0	6
Resina Flava	lb.	0	6
Rhei Radix (Russia)		36	0
— (East India) opt.		12	0
Rosæ petala		12	0
Sapo (Spanish)		3	0
Sarsaparillæ Radix (Lisbon)		8	0
Scammoneæ Gummi-Resina	unc.	3	6
Scillæ Radix siccat, opt.	lb.	5	0
Senegæ Radix		4	6
Sennæ Folia		6	6
Serpentariæ Radix		8	6
Simaroubæ Cortex		6	0
Sodæ subboras		3	6
— Sulphas		0	6
— Carbonas		6	6
— Subcarbonas		2	0
— — exsiccata		5	0
Soda tartarizata		2	6
Spongia usta		26	0
Spiritus Ammoniæ	M. lb.	5	0
— — aromaticus		5	6
— — fœtidus		5	0
— — succinatus		5	6
— Cinnamomi		3	0
— Lavendulæ		5	0
— Myristicæ		3	6
— Pimentæ		3	6
— Rosmarini		4	0
— Ætheris Aromaticus		7	6
— — Nitrici		5	0
— — Sulphurici		7	0
— — Compositus		7	6
— Vini rectificatus	cong.	30	0
Syrupus Papaveris	lb.	2	0
Sulphur		0	9
— Sublimatum		1	0
— Lotum		1	4
— Præcipitatum		4	0
Tamarindi Pulpa opt.		2	0
Terebinthina Vulgaris		0	10
— Canadensis		8	6
— Chia		12	0
Tinct. Ferri muriatis		5	6
Tragacantha Gummi, elect.		9	0
Valerianæ Radix		1	8
Veratri Radix		2	6
Unguentum Hydrargyri fortius		6	0
— — Nitratis		2	8
— — Nitrico-oxydi		3	0
Uvæ Ursi Folia elect.		5	0
Zinci Oxydum		7	0
— Sulphas purif.		3	0
Zingiberis Radix opt.		4	0

Prices of New Phials per Gross.——8 oz. 70*s* —6 oz. 58*s.*—4 oz. 47*s.*—3 oz. 43*s.*—2 oz. and 1½ oz. 36*s.*—1 oz. 30*s.*—half oz. 24*s.*

Prices of second hand Phials cleaned, and sorted.——8 oz. 46*s.*—6 oz. 44—1. oz. 33*s.* 3oz. 30*s.*—2 oz. and all below this size, 25*s.*

VII.—MISCELLANEOUS.

The freedom of the City of Bristol has been presented to **William Henry Goldwyer**, Esq. as a token of approbation of the important services rendered by him, as Surgeon to the Hospital established in that City for the cure of Diseases of the Eyes.

VIII.—NOTICES OF LECTURES AT EDINBURGH.

Dr. Dewar will commence his Course of Lectures on the Theory and Practice of Medicine, at the Theatre, Surgeon's Square, on Tuesday, November 12th, at Seven o'Clock in the Evening.

Mr. Allan will commence his Course of Lectures on the Principles, Practice, and Operations of Surgery, at the same Theatre, on Friday, the 1st of November, at Two o'Clock.

MONTHLY CATALOGUE OF BOOKS.

An extraordinary Case of Abscess in Perineo, &c. By Jesse Foot, Surgeon. 8vo.

A Letter to the Rt. Hon. Lord Binning, M.P. &c. containing some Remarks on the State of Lunatic Asylums, and on the Number and Condition of the Insane Poor in Scotland. 8vo.

Some Practical Observations in Surgery, illustrated by Cases. By A. Copland Hutchison. 8vo.

Report of Observations made in the British Military Hospitals in Belgium after the Battle of Waterloo. By John Thomson, M.D. F.R.S. &c. 8vo.

A Caution against Vaccine Swindlers and Imposters. By John Ring. 8vo.

NOTICES TO CORRESPONDENTS.

Communications are received from Dr. Bartley, Dr. Brenan, Mr. Blacket, R. D. Gaitskell, Mr. Edward Daniell, &c.

If Medico-Botanicus *will refer to the Copy of his Letter, he will find he has forgotten to put the questions to which he requires from us answers.*

Dr. Burnett *requests we will inform our readers, that he intends to reply to* Dr. Pym's Observations *which were in the Number for September last, in the* Repository *for December.*

Dr. Burrows *offers his sincere acknowledgments to those Gentlemen who have honoured his* "Observations on the Pathology of Insanity" *in the last Number with their notice. The best return he can make is, by appropriating the information imparted to the illustration of the subject he is attempting to investigate.*

Communications intended for insertion in the subsequent Number should be sent before the 12th of the month; and should be addressed (free of expence) to Mr. Shury, *Printer, 7, Berwick Street, Soho; by whom Books for the Review Department, Articles of Intelligence, &c. &c. will also be received.*

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No. 36. DECEMBER 1, 1816. Vol. VI.

PART I.

ORIGINAL COMMUNICATIONS.

I.

A Reply to Dr. Pym's "*Observations in proof of the Contagious Nature of the Bulam Fever, and on the Mis-statements of Dr.* Burnett *regarding the Disease.*" By W. Burnett, M.D. of Chichester, Sussex.

In a paper published by Dr. Pym in the *Medical Repository* (vol. vi. p. 186), I perceive he has made a futile attempt to invalidate three or four of the *numerous facts*, which, in answer to his rude and arrogant attack on me, I have arrayed against his doctrines. I shall proceed to lay before the public my reply to his observations on what he has been pleased to denominate my "mis-statements."

The first comment I am to notice, is, that I have made a personal attack on him, urged by the mortification of my vanity; and that his book had convinced every unbiassed mind of the contagious nature of the disease he treated of, except myself. I have no objection to leave the decision of these points to the judgment of the profession, confident that no illiberal language has been made use of by me towards Dr. Pym; nor, as far as I know, has any severe expression escaped me, which the provocation I have received would not justify in a ten-fold degree.

In the first instance I expressed a simple dissent from his opinion respecting the fever of 1810, in gentlemanly language, which he replied to by a most unhandsome and violent *personal* attack on me; thereby obliging me in return to examine the statements he made, which I have done in a mild, but as I intended and the subject demanded, forcible manner: and now that he finds himself detected and defeated, he wishes the public to believe, that I have had recourse to a conduct which he alone has adopted, and of which he must or rather *ought* to be ashamed.

How he can maintain that he thought the subject of this fever was exhausted, or that he made converts *to his doctrines* of almost every person but myself, I cannot imagine; while he must see that the press is constantly teeming with facts in opposition to his dogmas, and when he cannot fail to know that the general experience and voice of the medical officers of the Navy are against his vain and presumptuous pretensions, as well as a considerable majority of the medical officers of the Army who served in Gibraltar.

He says I have "shrunk from the medical part of the question." I do not know what he may call shrinking "from the medical part of the question:" but if proving that the fever of Gibraltar is not such as he has described it; that symptoms which he has stated *never* to occur in that disease are *frequently* met with; that others which he asserts are so common as to be considered *diagnostic* are seldom observed; that a method of treatment which he stigmatises, though he did not practise it, is that which of all others is attended with the happiest effects; if proving that Dr. Pym, to make up his story, has deliberately garbled the statements of Mr. Donnet and myself; that he has given the public a *minute* history of the disease in question, and a plan for its cure *totally* different, (and as he now acknowledges without a single note or case to guide him) from the one he wrote when actually in practice; that his account of the introduction and subsequent propagations of the fever in 1810 is *completely* erroneous; if, I say, proving these truths and many others beyond all cavil, can be called "shrinking from the medical part of the question," then am I guilty. But Dr. Pym could not have seriously believed this himself when he wrote the paragraph alluded to, for he *must* have felt the force of the testimony I have brought against him; else, with his "overwhelming evidence" as he terms it, he would have found no difficulty in refuting every statement I have advanced, instead of merely *attempting* to controvert two or three points, with what success will be seen hereafter. I assure Dr. Pym, that I entertain no personal ill-will towards him; but it was rather too much to expect, with such documents as I am possessed of, that I should allow his attack on me to remain unanswered. Had this gentleman's strictures on any thing I have advanced contrary to his opinions, been couched in different terms, I should perhaps never have thought them worth the trouble of contradicting; but he has now altered the case entirely, and he may rest assured, that much as I dislike controversy, whenever he attacks, I shall be found at my post.

He introduces a letter from Dr. Arthur, and the opinion of

Mr. Thomas of the artillery, to prove, that the "Bulam," (a disease by the way which never existed) has not for some time past prevailed in Barbadoes; and I have no doubt that the testimony of these gentlemen, as far as they have been individually concerned, is quite correct; that is, *they* may not have seen *many* cases of severe attack; but they cannot *pretend* to state what has come under the observation of others, either in different parts of that island, or in our other numerous colonies in that quarter of the globe. Indeed at this moment the yellow fever is very prevalent in St. John's, Antigua, and as the papers say, in Guadaloupe, while Barbadoes is as usual very healthy. Were expeditions composed of unseasoned and new-raised troops again to leave Europe, for the attack of the Caribbean Islands, as happened at the commencement of the revolutionary war with France and at other subsequent periods, I have no doubt the same melancholy scenes we then read of would again be presented; but with such a man as Dr. Jackson at the head of the Medical Staff of the Army there, without meaning the smallest offence to his predecessors, I am convinced the mortality would indeed be greatly lessened. Dr. Pym may make himself perfectly easy concerning the yellow fever of the West Indies: if I am not much misinformed, the subject is in very good hands; and before many months shall expire, he will perhaps have as little reason to congratulate himself on that part of the subject, as he has on his account of the endemic of the Mediterranean.

He says, "if this fever was produced by irregularity, drinking spirits, or exposure to the sun, no warm climate would ever be free from it." The reader will, perhaps, be surprised to find, that irregularity, exposure to the sun, &c. have really been in Gibraltar most powerful and frequent exciting causes, as the following extracts from the official reports of the medical officers employed in Gibraltar, and which Dr. Pym seems to have perused a short time ago, will sufficiently shew: "In some," says Mr. Martindale, "it appeared after recovering from the effects of intoxication; and the number taken ill on public employ, shews that fatigue materially assisted in bringing the disposition to fever into action. The heat of the sun also proved an exciting cause, as centries were taken ill on their posts: one officer fishing all day in the sun; and another, after walking to the top of the rock during the heat of the day, had severe attacks of fever." Mr. Wild states, "Men with detachment in town and on public employ, suffered most." "I believe," says Mr. Amiel, "it particularly arises in that class who are exposed to the sun or great fatigue, are reduced to low living, or indulge in drunken excesses."

With respect to my accounting for the attack of the soldiers' first six attacked fell victims to the disease." Allowing that the persons referred to were the first attacked, (which I by no means do,) this I submit proves nothing; the attacks may have been originally mild; but was the treatment proper? At all events, Dr. North's system of evacuation cannot be blamed in these cases, nor for the *early* mortality amongst the artillery. So much for his charge of "wilful misrepresentation."

The next paragraph Dr. Pym notices, is one wherein I state that it appeared "*more than probable*" it was under his own superintendance the increased mortality took place. But he leaves out this part of the subject, wishing the reader to infer, that what I mentioned as a *probability* only, I have asserted as a fact. I have no hesitation in acknowledging, that in the *detail*, I have fallen into an error, merely as must be evident from overlooking the return he has mentioned. But while I admit this, I must at the same time offer my best thanks to Dr. Pym for calling my attention to this return, as I shall now, by the aid of Sir James Fellowes and himself, establish as a fact, what was before a matter of conjecture; and I *re-assert*, that the comparative mortality was greater under his superintendance than under that of Dr. North.

The following are the proofs:

Monthly Return of the Sick.—Gibraltar, Oct. 20, 1804. (PYM. p. 40.)

Corps.	Remaining in the Hospital 20th Oct.	Since admitted.	Discharged.	Dead.	Fevers.	Dysentery.	Pulmonic.	Hepatitis.	Venereal.	Wounds and Ulcers.	Convalescent.	Total Sick.	
2nd Regt.	15	191	85	30	34						57	91	
10th ditto.	49	164	108	7	60	7	1	1		4	33	106	
13th ditto.	51	237	45	30	89					3	79	171	
54th ditto.	38	259	158	44	46				2		48	96	
De Roll's.	71	273	128	115	41	1				1	55	101	
Total......	224	1124	524	226	270	8	1	1	2	8	272	565	

Return of Non-Commissioned Officers and Soldiers who were attacked, recovered, or died of the prevailing fever in Gibraltar, in 1804. (FELLOWES, p. 450.)

Corps.	Admitted.	Recovered.	Died.	Day on which the disease first appeared.
2nd Regiment.	400	269	131	29th of September.
10th ditto.	419	397	22	22nd of September.
13th ditto.	479	349	130	30th of September.
54th ditto.	456	356	100	21st of September.
De Roll's ditto.	414	227	187	Two men attacked before the 20th of September.
Total............	2168	1598	570	

* *The last* column in the second table is not in the original tables.

Abstract of the number of troops under treatment for the epidemic fever in Gibraltar previous to the 20th of October 1804, and deaths therefrom.

Corps.	Under treatment.	Died.	Proportion of deaths.
2nd Regiment.	157	30	About 1 in 5
13th ditto.	148	30	About 1 in 5
54th ditto.	213	44	About 1 in 5
De Roll's.	232	115	About 1 in 2
Total...............	750	219	1 in about 3½

Abstract of the number of troops under treatment for the epidemic fever in Gibraltar in 1804, *subsequent to the 20th of October*, and the deaths therefrom.

Corps.	Under treatment.	Died.	Proportion of deaths.
2nd Regiment	143	101	! ! !
13th ditto.	331	100	1 in 3⅓
54th ditto.	243	56	1 in 4⅓
De Roll's.	182	72	1 in 2½
Total.............	899	329	Less than 1 in 2¾

Here then is proof positive of the truth of what I have advanced on evidence he will hardly attempt to call in question; and it is a flattering specimen of the success of his antimonial emetics, bark, &c. Dr. Pym talks a great deal about the mortality in De Roll's regiment, in which Mr. Griffiths states *that the lancet was not used*; but he takes care not to mention any thing about the *greatly increased loss* in the 2nd regiment under his own superintendance. I have given him the advantage of supposing that the lancet continued in use up to the 18th or 20th of October; but I refer the reader to pages 238 and 298 of his work, in proof that this was not the case.

The foregoing is a tolerable set off, against the general and sweeping assertion contained in Mr. Kenning's letter; and I greatly lament I am not able to apply the same test to that, which I have done to Dr. Pym's statements: no record being preserved in the Office of the Director General of the Medical Department of the Ordnance, except the number of deaths. Whatever may have been the effect of the authority he mentions in the Artillery, it is now satisfactorily established that its benefits did not extend to the other troops. Without however intending any personal offence to Mr. Kenning, and taking into consideration the results afforded by examining the returns of the other corps, I may be allowed to doubt whether so general an asseveration, unsupported by any detail of particulars, on a subject on which he appears to have entertained a different opinion from the head of the Medical Department, can be considered quite impartial. To give weight to his statement, he should have mentioned the comparative numbers which died under each mode of treatment, the date of the attack, the time when his patients were bled, the quantity of blood taken away, and the auxiliary treatment, &c.; for even had the disease been contagious, it by no means follows that blood-letting was improper; and from the success which has attended this remedy in the hands of others, may we not conclude with a late author, though writing on a different disease, "either the quantity of blood taken away has been too small, or the time when it was taken too late to be of any use; and thus the principal remedy of the disease has been brought into disrepute."

He next quotes an extract from Mr. Humphrey's account of the disease relative to blood-letting, and the opinion of Dr. M'Mullin, as to its non-contagious nature and the necessity of employing the lancet. As Mr. Humphreys has since inserted his paper in the Edinburgh Journal, he will without doubt reply to these observations. I shall however notice what Dr. Pym has published, as the reply of that gentleman to Mr. Frazer's queries; viz., that he lost *one in four before he adopted blood-letting, after which not a man died!* I have not the pleasure of a personal acquaintance with Dr. M'Mullin, and he being at present stationed at Corfu, I cannot well delay my reply till I have communicated with him; but most likely, should the remarks alluded to meet his eye, he will notice them at some future period.

He may well say "it is in vain to enter upon a controversy of blood-letting again;" for I have established, beyond all doubt, that in the endemic of Gibraltar its success has been *infinitely* superior to every other remedy. Neither Mr. Lea, nor Mr. Humphreys *lost one man* whom they bled in 1814; can this be said of any other method of treatment? would all the emetics and bark in the apothecaries' store have been attended with such a result?

Dr. Pym next contrasts the reports of Messrs. Frazer, Barker, Foote, and Sutherland, who he says did not use the lancet, with those of Messrs. Lea and Martindale, who did; and states, that the former were more successful than the latter. With respect to Mr. Lea (as I have already stated), *he did not lose one patient whom he bled;* and Mr. Martindale's reply to Mr. Frazer's queries (page 402 of my work) shews, that the use of the lancet appeared *only in one solitary case* to have been attended with bad effect, and that patient recovered. But he knew he was giving an *unfair* view of the case, when he wrote the paragraph, else why did he omit to mention the two German regiments? he ought also to have stated the localities of the

o; viz., that the 11th Regiment,
I have been informed, sta-
omewhere on Europa Point;
amongst men who were taken
y no doubt); while of eighty-five
South, not one died; indeed the
in this regiment appear, from the Sur-
have been quite ephemeral. The two
, on the contrary, were quartered *in the town.*
had charge of the 60th and did not bleed, lost
ven; and Mr. Playfair, attached to Dillon's, who
ained from the use of the lancet, lost one man in
half. As to his observation that Messrs. Grasse,
, Lamert, and Amiel reprobate blood-letting, "we
nly his authority for it;" and, as far as I know, neither
hese gentlemen gave it a trial! Respecting what he says
out the fever in the Chichester store ship, which is quoted
n my work from a written account I received from Dr. Harness, I shall only observe, that until Mr. Doughty's book was published, I never either saw or heard of any other statement relative to it, nor would any thing I have since seen have altered my opinion of that occurrence.

At page 194 *(Repository)* Dr. Pym says, "I shall now make some observations upon Dr. Burnett's reply to my publication, and I repeat again, he has never seen the Bulam fever. He is very angry with me for this assertion, and at page 477 says, that he has often seen and treated the concentrated or ardent yellow fever, both at St. Domingo and Jamaica; and trusts that he profited much by the opportunities he enjoyed of making himself acquainted with the disease. This I took for granted was correct, and carefully examined his book to find his description of the symptoms, and the quantity of blood drawn from each patient; a practice he had derived so much benefit from in the Mediterranean in 1799; but, to my mortification, I only found the following passage at page 39. 'I sailed for Jamaica in the Blanche of 36 guns in 1802, strongly pre-possessed in favour of mercury; but a service of nearly a year and a half on that station, while it afforded me but too many opportunities of seeing the yellow fever both at Jamaica and St. Domingo, served indeed to convince me that I had [illegible] over-rated its virtues. Without adverting to the many patients which perished around me in *the* ships and hospitals, I may state that four of *my* most intimate friends died under the use of mercury, one of them the first Lieutenant of the ship fully salivated; in the others, though taken in sufficient quantity, it produced no obvious effect.' This is the only account he gives of his West India cruize; regarding which, as to me this relation did not prove satisfactory, I wished to see the list of the numerous patients who perished around him, and at the Transport Office was favoured by Dr. Harness with a view of Dr. Burnett's Journal; when I found that only twenty cases of fever appeared upon the face of it; thirteen of which were cured on board by purgatives, (calomel gr. viii. jalap gr. xv.) and seven were sent to the hospital. Calomel was not given to one patient as an alterative, nor did one patient die on board during the whole time Dr. Burnett was in the Blanche; when he left her, he moved into another ship with the view of coming to England, on account of his health." This history explains his suspicions respecting my notes of the fever in 1804, when he says, "it assuredly does appear very extraordinary that he should have lost his notes in l'Athenienne, where he was only on a voyage of pleasure, being on leave of absence from his duty in Gibraltar. I might deny this in strong language. I was not on a voyage of pleasure; but went to Sicily with views of promotion, and never expected to return to Gibraltar. I was put in orders to act as a Deputy Inspector soon after my arrival in Sicily; and I lost in the wreck of l'Athenienne, not only my papers, but books, plate, stores, &c., amounting to the value of nearly £1200. Such was the cause of the loss of my notes in 1804; and as to the cases which he calls for in 1810, he is aware that I was at the head of the department, and had not the charge of the sick."

I shall endeavour to answer the foregoing *tirade* in as few words as possible; and, as he says, "I might contradict him in very strong laanguage." As to his making me angry, I assure Dr. Pym that I should despise myself very nearly as much as I *pity* him, were it possible for any thing he can with truth alledge against me to have such an effect. He is, no doubt, very much disappointed that I did not follow the example he set me; but I hope I have too just a sense of what is due to myself, as a member of a liberal profession, to imitate him. I have *not* stated that "I profited much by the opportunities I enjoyed;" but that I trust I profited as much as Dr. Pym had done, or my time would have been very much mis-spent indeed. The account I have given of my West India cruize (as he calls it) is perfectly correct. I did *not* say (of which he is perfectly aware) either that the patients alluded to died under my care, that I practised blood-letting, or that every patient took mercury as an alterative. He *could not* therefore have expected to see the list of the numerous patients who perished around me in the *ships* and *hospitals* contained in *my* journal, or the quantity of blood taken from each patient. If he can make it appear that a single frigate formed the whole quadron on the Jamaica station at that period, or that the ick sent from the Blanche were the only ones in the naval hospital, then there would be some sense in his observations. Though the ship just mentioned was certainly comparatively healthy, from being a great deal at sea during my service in her in the West Indies, yet many severe cases of fever occurred, and seven, as he states, were sent to the hospital.

With respect to what he asserts of only twenty cases of fever appearing on the face of my journal, he may, for any thing I know to the contrary, be perfectly correct: but he must have known, and if he did not, Dr. Harness could have informed him, that it was neither customary nor expected that *every case* which occurred should be inserted in the journal; in fact, the Official Journal furnished by the Medical Board would not in general contain a third of them. On looking over the list of cases of fever in the Blanche during the time I served in her in the West Indies, I find that seventy-three were under my care in that ship, of whom seven were sent to the hospital, where several died, as I heard afterwards. In the Desirée, which ship I remained in for ten weeks after I left the Blanche, I had twenty-two cases of fever under my care; one of which was sent to the hospital, two died on board, four were left on the sick list when I quitted the ship in Port Royal, and the remainder recovered. Had I used antimonial emetics, as Dr. Pym did, I have no doubt half of that number would have required sending on shore, few of whom would have rejoined their ship again. The friends I mentioned as having died while taking mercury, were first, Captain Murray of the Port Mahon, promoted from the Blanche, on the third day of his illness; second, Mr. Budd, Surgeon's Assistant in a store ship; third, Lieutenant Frond, first Lieutenant of the Blanche, taken ill on the 18th of April, sent to the hospital the same day, and died on the 24th, *fully salivated;* and fourth, the first Lieutenant of the Desirée, who was attacked on the 5th and died on the 10th of June. But independent of all this, I had a full opportunity of seeing the disease on a large scale in the hospital at Port Royal, which, while I remained in port and my health would allow, I frequently visited, from a wish to make myself acquainted with its nature and treatment. It is a little singular Dr. Pym should expect me to keep a register of all the cases of fever in the fleet and hospital, where I could only be a spectator; when he himself offers, as an excuse for having no detail of any cases of fever in 1810, that he was at the head of the department! I believe this is the first, and in all probability will be the last, time that the facility of acquiring the knowledge of a disease will be urged as a reason for neglecting it! With respect to giving mercury as an alterative, there must certainly be some mistake; for in every case I judged it necessary, I assuredly prescribed it; as Mr.

Murray, the Purser of the Blanche, and Captain Stodart, Lieutenant in the Desirée, each of whom took it in considerable doses, can testify. There can be no reason the slighter cases should not recover by the use of brisk purgatives in the Blanche, in the same way so very many of the soldiers and others attacked in the late endemics at Gibraltar did; nor was it necessary to salivate a patient who would recover quite as soon and as perfectly without it. Regarding his having gone to Sicily with *views of promotion*, and not on a voyage of pleasure, as I have said, I shall only observe, that I do not pretend to know what his *private motives* may have been, but I again assert that he left Gibraltar on *leave of absence, and not by order of his Commanding Officer:* and as to his *plate*, which he laments so much the loss of, it was notorious at Gibraltar that it consisted of several thousand dollars which he carried with him, the exchange being much in his favour at Sicily! During his stay there, he was, as I have been informed, put in orders as a Deputy Inspector by General Fox; but in consequence of a representation from some of the medical Staff of the Army, his appointment was cancelled. And what confirms this statement, is, that he returned to Gibraltar as the Garrison Surgeon, and was not promoted to be a Deputy Inspector till after the *famous* fever of 1810.

The next point of difference between this gentleman and myself, is relative to the convalescence of some men belonging to the 13th regiment, which he mentions having had charge of in 1804. The following are the lists which he has inserted at page 249 of his book, by which the reader will judge how far I have been inattentive to my motto.

1 died on the	2nd day	1 died on the	6th day
8	3rd	1	7th
2	4th	1	9th
1	5th	1	11th
		Total...16	

1	discharged convalescent on the	2nd day after being attacked
2	....	4th
4	....	5th
5	....	6th
10	....	7th
12	....	9th
11	....	10th
11	....	11th
6	....	12th
7	....	13th
6	....	14th
2	....	15th
1	....	18th
1	....	26th
79		

It appears, certainly, by the foregoing statement, that I have erred, as far as that *three* cases only were discharged convalescent before the fifth day. He says he lost all his notes relative to the fever of 1804: be it so; but then it should be asked, where he got this list? for after all, to use an expression of his, "we have only his own authority" for the authenticity of it. But there is another circumstance which appears to me to throw great doubt on the accuracy of this account. Dr. Pym would have us believe that he lost only sixteen patients out of one hundred and five; while no less than eighty-four died out of two hundred and twenty-six in the same corps and at the same period!

The reader will probably recollect that Dr. Pym's plan of treatment commenced with *antimonial and other emetics;* a practice which almost every writer on the fevers of warm climates condemns in the strongest language. He says, "in dangerous cases, like Dr. North's and my own, or, as Mr. Vance says (p. 416), where the patient does not complain until the second day, common sense will tell him that the convalescence will be naturally much slower." Now this is exactly what I remarked, and what Mr. Griffiths states in his report of the Mahon fever in the Leviathan, a *garbled* extract from which is quoted at page 267 of Dr. Pym's book; and when commenting on the passage alluded to, he observes, "I must here call my reader's attention to this accout, *so different* from the 'Bulam' fever, with its single paroxysm, *seldom extending beyond the third day.*" Dr. North not only mentions his own protracted convalescence, but also that "those who have hitherto recovered, have come forward *very slowly;*" from which it is evident that Dr. Pym's remarks on this point are not founded on experience or fact.

He then proceeds—"Dr. Burnett also says (p. 416) 'he has abundance of evidence to prove that the fever of Gibraltar is generally a disease of much longer duration than is represented by Dr. Pym;' and immediately, in his usual inconsistent way, brings forward in support of this assertion—*first**, the statement of Mr. Barker of the 11th regiment, who contradicts him in every part of his evidence." If the reader will take the trouble of turning to the page pointed out by Dr. Pym, he will find *that genleman deliberately* misrepresenting facts; for the *first* evidence I adduce is that of Mr. Donnet and *not* Mr. Barker;

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* This truly consistent gentleman, in his book on the "Bulam," supposes it to be the same fever as the endemic of Batavia, described by Johnson and introduced from Siam: in one of the Medical Journals he *deliberately* sets about to prove it a different disease!

and it will there be seen, that the termination of the febrile action in the first-mentioned gentleman's patients was on the 4th, 8th, 9th, 11th, 12th, and 15th days of their illness. It is useless again to introduce the whole of the testimony on this head, which completely overturns all hypothesis. It is also unnecessary for me to observe, that I have neither said or thought that deaths or recoveries do not happen from the third to the fifth day in the fever of the Mediterranean; indeed the evidence contained in the cases I have brought forward, and in the official reports of the medical officers of the fleet, would have completely contradicted me if I had done so. But I again repeat, that the termination of the disease does not *generally* take place before the third day, and I appeal to the tabular form he has given of the replies to Mr. Frazer's queries for the truth of this. Mr. Frazer himself makes the termination on the sixth and seventh days in fatal cases.

He next observes, that I make an attempt to prove that black vomiting is a rare symptom in the Bulam fever; and that, by adducing the testimony of Mr. Martindale, I have made an unfair statement, inconsistent with my motto. I have not only made an attempt, but, to his utter confusion and dismay, have proved, that out of 126 cases in the 67th regiment, 27 of whom died, the *black vomit* was not once seen. I have not asserted, as he very well knows, that the black vomit does not occur in the endemic of Gibraltar, but that it is a *much rarer* symptom than he would wish to have believed.

In the abstract of the replies which he has drawn up, he has *carefully* abstained from giving any intimation of the opinion of the medical officers as to the IMPORTATION of the disease, as this would not have suited his purpose exactly; but I shall take leave to remind the reader, that of *seventeen* gentlemen, who were called upon by Mr. Frazer for their opinion, *twelve* declared it to be a fever of domestic origin, three were undecided, and only two, the Surgeon and Assistant-Surgeon of the 11th regiment, considered it as imported. He states the opinion of Mr. Short as *undecided* as to the contagious nature of the disease; I shall only observe, that this gentleman's words are, as far as I recollect, that in his *own* opinion the disease is *not contagious*, but that he does not pretend to decide the question.

He says, that I enter into a defence of my opinion respecting the sequelæ of the disease; but that it is unworthy of notice: that after the "Bulam" fever, patients were not affected with diseased viscera, while the Temeraire man of war, after Dr. Burnett's fever, *sent nearly eighty men to England as invalids.* The truth is, I have proved by Asequla, Riseuno, and the circumstances attending the 67th regiment at Carthagena, that diseased viscera frequently follows an attack of the "Bulam;" and as I have mentioned at page 480, fifteen of the men belonging to the 26th were sent to England, from diseased viscera no doubt; one died consumptive, and another with dysentery, who suffered an attack of the endemic at Gibraltar in 1804. With regard to what he says of "eighty men being sent to England invalided from the Temeraire," he *must have been aware* at the time he wrote that sentence that it was a misstatement; and if the reader will turn to page 168 of my work, he will find that the Temeraire sailed from Mahon for England on the 25th of December, and was there paid off; that her men were turned over to the Union, which ship arrived in the Mediterranean; that nearly twenty were sent home from her who had had fever the preceding year in the Temeraire; and that *all the invalidings and deaths* amounted to eighty.

What Dr. Pym says about quarantine is beneath notice: He certainly does not really believe the disease can be imported, or he would not have admitted a vessel to pratique and immediate communication with the Garrison, which had only two or three days before left an infected place, and against which he had established a strict quarantine!

He observes, "Dr. Burnett's next and most violent attack upon me, but which only proves the weakness of his cause, is an attempt to throw discredit upon my official report to the Army Medical Board, respecting the commencement of the disease in 1810*." He then proceeds to state that I introduce the fever, mentioned at page 138, which occurred in the Sau Man, with the view of insinuating that the Bulam existed in the Garrison before the Minorcan family were attacked. Some of the cases in the Sau Man I believe he saw; but not, I should suppose, in company with Mr. Gardiner, who had not at that time arrived, being on leave of absence in England; therefore that gentleman could not agree in opinion with him that it was the common bilious fever. He then transcribes Mrs. Vaughan's case from page 447 of my work, which Mr. Donnet had reported to him as a *genuine case of yellow fever*, which he is obliged to acknowledge to be true; although it took place upwards of a fortnight previous to the time he assigns as the period when it was introduced by Jacinto Rey; and he offers the following reasons for his extraordinary conduct on this occasion. "First—because I knew that Mrs. Vaughan and her husband had both had the disease in 1804; of course not liable to a second attack: secondly—because there was no appearance of disease in the neighbourhood: thirdly—there being circumstances attending the history of her case which led me not to suspect contagion, but that some *deleterious medicine* had been administered, and to cause inquiry to be made at the apothecaries' shops *whether she or any of her family had purchased arsenic* or *corrosive sublimate.*"

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* This is the first time I have heard of the passages I have examined being an official report. If I had, it would not have altered the question.

Unfortunately for Dr. Pym, Mr. Donnet was in England at the time these observations met my eye, though on the eve of sailing for Gibraltar; and having referred them to his notice, subjoined are his remarks thereupon, contained in a letter to me, dated the 20th of September last. "It will be a matter of great *astonishment* and *surprise* to poor Mrs. Vaughan's relations, when they happen to read the paragraph Dr. Pym has published in the *Medical Repository* as the cause of her dissolution: at the time I made my report to him, he observed that Mrs. Vaughan must have taken something hurtful, *and I remember well* that *spiritous liquors* were mentioned; *but I never supposed, until I met him the other day in the Strand*, that he suspected *poison* had been the cause of her death. *I have no reason on earth* to consider her case in a different point of view from that in which I have reported it. No coroner's inquest sat on the body."

In a letter of Mr. Donnet to his frend Mr. Whitmarsh of Hasler Hospital, he expresses his surprise at what Dr. Pym has said on this subject in still stronger terms; and adds, "I wonder Mr. Pym, entertaining a supposition of that nature, did not cause the body to be examined, *instead of desiring Mrs. Vaughan's mother to have it interred the morning she expired, while she was supplicating the delay of the funeral till four o'clock!*" Dr. Pym's *conduct* in this case is totally irreconcilable with what he has advanced as his reasons for not mentioning it. If he *really* suspected this lady to have died from poison, it seems very strange, to say the least of it, that he should neither on the one hand have mentioned his suspicions to Mr. Donnet, or on the other hand have ordered the body for immediate interment, before a coroner's inquest had sat, and before he could possibly have ascertained (even allowing that inquiry had been made) whether poison had been purchased and administered. But his own reasons contain in themselves evidence that the cause I have before assigned for his suppressing this case is the true one; for it is clear from what he says, that had there been any other person ill in the neighbourhood, we should have heard nothing about poison, or the introduction of the disease by the Minorcan carpenter. But there is still another reason for his silence on this occasion: to have publicly acknowledged this as a case of "Bulam," would have shaken his favorite hypothesis to its foundation; for on the authority of himself, and his evidence Mr. Donnet, it is an indisputable instance of second attack.

He says, "Dr. Burnett next brings forward Mr. Amiel to prove that the fever of Jasinto Rey was very nearly related to the bilious remittent of this country. Mr. Amiel attended not only Jacinto Rey, but all the other members of the family; and I make no doubt was aware of the friar (not priest) having visited the family during their indisposition: and unfortunately for Dr. Burnett, I am in possession of his report, which I shall insert at length, and ask Dr. Burnett whether he suspects contagion in this instance, or whether Mr. Amiel himself was not of the same opinion upon this occasion, as well as upon many others."

Mr. Amiel certainly visited Jacinto Rey and his family, and I bring his testimony forward, not only to prove this, but also that he attended a Mrs. M'Lean, with *precisely the same disease*, more than a fortnight before that period; viz. from the 3rd to the 8th of October. Jacinto Rey was not attacked till the 20th following. As to what he says of Mr. Amiel being aware of the friar (as he now denominates him) visiting the Minorcan family, he was perfectly acquainted, before he wrote this paragraph, that it could not be correct; for he must have seen, by turning to page 450 of my work, that Mr. Amiel states that no Spanish priest visited Jacinto Rey *during* his illness in the garrison; therefore none could have received infection from this source, but that *after* he was sent out to the neutral ground, he *there* found some Capuchin friars, one of whom had attended the father during an illness (dropsy of the chest), of which he died on the *30th of September, three weeks* before the son was attacked with the fever in question. With regard to Mr Amiel's opinion of the contagious nature of the disease, I shall refer the reader to his most interesting account of it, inserted in the 57th number of the *New* Medical and Physical Journal; where it will be seen that he considers the diseases of local origin, sometimes in the abodes of filth and confined air, acquiring contagious properties.

Dr. Pym then gives an extract from Mr. Humphrey's account of the Gibraltar fever, stating the many slight cases which occurred, to which he calls not only my attention, but that of every reader; and asks, "is it not inconsistent to call this the concentrated ardent yellow fever, or highly aggravated degree of the bilious remittent." Now this is the very point I have been contending for; and I agree with Dr. Pym that it is inconsistent to call these cases the *concentrated* yellow fever, or even an aggravated form of the bilious remittent; yet from the evidence of Messrs. Gardiner, Lamert, and Donnet, it is clear that such ephemeral cases constituted a considerable proportion of those attacked at Gibraltar in 1813, and which has been termed the "Bulam," to distinguish it as a disease of a most violent pestilential nature! The truth is, we have hitherto had from him an exaggerated account of the disease drawn from some aggravated cases; the bad symptoms in which were as likely to have been brought on by antimonial emetics as by the malady itself. The next paragraph I am to notice, is a quotation from his own book as follows: "During the time the disease had been going on on board the transports in the Bay, the garrison continued in perfect health until the *20th of October;* when, in consequence (as I must suppose) of a breach of quarantine regulations, which however could not be detected, a Minorcan family, in the south district belonging to the dock yard, was attacked with the disease. The first information I received of it was on the morning of the 26th of October, in consequence of the death of one of them, a young man, clerk to Mr. Boschetti; he had been pronounced convalescent on the 24th; having, as the medical person who attended him supposed, a remission of all his bad symptoms, which proved to be only a prelude to gangrene of the stomach. I immediately visited the family, and found from the history of the case of the deceased, and the situation of the other members of the family and friends, that the disease we had so much reason to dread, actually existed. Six out of seven persons had already been attacked in one house; and three other families, neighbours, who had visited them, *as also a Spanish priest who resided in town, who had visited professionally the brother of the deceased,* a carpenter in the dock yard (Jacinto Rey) and who I suspected of having communicated with the infected transports in the Bay. Within a few days, several persons, all neighbours of the first family taken ill, were declared to be infected. On the morning of the 28th, Mr. Kidstone, surgeon, Seventh Royal Veteran Battalion, also reported to me the deaths of two men in that regiment, and that he had several cases of fever in the hospital, which he suspected to be of that nature; five fresh cases were also reported in the barracks in the course of the day," &c. &c. Here Dr. Pym stops, and only gives an abstract of the following paragraph, which, however, I shall insert in full, as it contains a summary of his history of the introduction and subsequent propagation of the fever: "*The disease on shore commenced in the Minorcan family,* and ran through all the members of it, seven in number. The six soldiers who died, were all taken ill in the same barrack room. Mrs. Nicolls caught the disease from her servant; and within the walls of the town, a mile at least from the infected district, only two persons were attacked with the disease: viz. the lady who assisted Captain Boyd, and the priest who attended the Minorcan family." To throw discredit on this account, he brings forward an affidavit by Jacinto Rey, *that the priest I mention was not a priest but a friar*; and he states, that this friar did not visit him, but his father; and of course the other members of the family; and it was in consequence of this circumstance, when it was necessary to establish a precautionary quarantine upon every person who had visited the *infected family during their illness*, that this friar was discovered; and the only person within the walls of the town at that time labouring under the disease. As to his affidavit, that he did not communicate with the transports, this is disproving what I never asserted; I only said I suspected him; and I do not conceive, if he had committed a breach of quarantine, he would be such a fool as to acknowledge it."

Before I proceed with my observations on this part of the subject, I wish to call the reader's attention to the *dates* and particulars given by Dr. Pym in his own account of this transaction—by those he must stand or fall.

I have proved by the solemn declaration of Jacinto Rey upon oath, and also by the concurrent testimony of Messrs. Donnet and Amiel, that this person had no communication, directly or indirectly, with the transports from Carthagena; and also, that he was *not* the first person attacked. But independent of the cases of Mrs. M'Lean and Mrs. Vaughan, mentioned by the gentlemen just named, I have proved by the communication of Mr. Kidstone, surgeon, and Mr. Waters, assistant-surgeon of the Seventh Veterans*, (Dr. Pym's *own evidences*, and I believe the only medical officers of the garrison who supported his opinions respecting the fever of 1810,) that Thomas Nottage, a soldier of that corps, was taken ill on the 11th of October, (*nine* days before Jacinto Rey), and died on the fifth day thereafter. That Darby Ferguson, another soldier of the same regiment, was attacked on the *nineteenth*, (the day before the above-mentioned Rey,) who, according to the surgeon's account, was not even a convalescent till the 5th of November, (rather a long seventy-two hours); which circumstances, Dr. Pym, as the senior medical officer, *must be fully sensible of*. With respect to what he says of the Spanish priest, having already in a preceding page shewn, that *neither priest or friar* visited Jacinto Rey *during his illness within the garrison*, I shall not stop to notice it, but leave the author of it to the opinion of the reader. He says, the priest alluded to above, and a lady, were the only persons attacked within the walls of the town, a mile at least from the infected district. Instead of only *two* being taken ill within the walls of the town, I have proved that no less than *ten* soldiers belonging to the Seventh Veterans were attacked in the cooperage barrack, situated at the extremity of Water Port Street, *within* the walls of the town, having a very populous neighbourhood contiguous. The question however respecting this circumstance lies in a very narrow compass; is the cooperage barrack situated within the walls of the town, or in the the infected district, a mile from it? It is easily solved, and the conclusion is inevitable! As to what he says about its being cut off by a barrier in 1810, I shall only observe, that by the statement of Mr. Waters, the assistant surgeon, the disease first appeared in the battalion on the 11th of October; the second case on the 19th; third on the 25th; fourth on the 27th; and by his own account, he knew nothing of the matter till the 28th; the regiment was moved out to the neutral ground on the 29th, so that the barrier must have had a most miraculous effect, for the few hours it inclosed the regiment. Only one case occurred after the 29th; and this poor fellow, instead of having a paroxysm of only seventy-two hours, unfortunately had one which lasted fourteen days.

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* Of such consequence did Dr. Pym consider the testimony of these gentlemen, that he published their letter in the Gibraltar Chronicle, and it was copied into the Edinburgh Journal, vol. vii. p. 127.

He next *attempts* to refute the account I have given of the illness of Ann Barlowe, the wife of an artillery-man, and inserts a communication he has received from one of the surgeons of the artillery at Woolwich, as follows:

"Gunner Barlowe, being examined, states, that 'at Gibraltar in 1810, his wife was taken ill in the night with fever; that early in the morning (about eight o'clock) he went to surgeon Sproule, who very soon visited her, and immediately, upon seeing her, put her shed in quarantine. He further states, that the shed was in the south, not within the walls of the town; *that no person was allowed to enter the shed after his wife was taken ill;* that *nobody* visited her during the whole day; and that she was removed to the neutral ground on the evening of the *same day* she was taken ill: she died on the fourth day of her illness, and her child thirteen days afterwards.' This requires no comment."

As to the case in question, Dr. Pym is perfectly aware, that, even were it erroneous, no personal blame could attach to me; for he must have known that it was communicated by Mr. Glasse, surgeon to the forces then in Gibraltar; and so careful was I not to commit an error, that I inserted the account, verbatim, from that gentleman's written communication, which he gave me early in February 1815, mentioning it as a very strong proof of the non-contagious nature of the disease.

Having referred the foregoing examination (as it is called) of Gunner Barlowe to Mr. Glasse, he has made the following observations thereupon, which completely confirm every thing he before had said:

" The case alluded to, was that of a woman of the royal artillery, residing in a small shed at the back of South-shed Guard in Gibraltar, *to whom I was taken to inspect by Mr. Pym himself*, in the year 1810, and found her labouring under fever, attended with very alarming symptoms. Her eyes were red and clouded, pulse small and low, with great irritability of stomach and black vomiting. I considered it to be very similar to the fever in that garrison in 1804, *and stated my opinion to that effect to Mr. Pym in the shed.* She was sent out to the neutral ground, and, to the best of my recollection, died on the next day. I understood at the time that her name was Barlowe; if it was not, I shall feel obliged by Mr. Pym acquainting me with her name, as he must be well aware of the *fact*, not only at the time he took me to see her, but a few evenings afterwards, when I read a statement of her case to the Board of Health, *in his presence*, which written statement I left with Mr. Bell, secretary to the Board." He then adds, " This, Sir, is the *true* state of the case: that she might only have been reported to Mr. Sproule that morning, is very possible; but from the state she was in when seen by Mr. Pym and myself, it is evident she had been ill three days, and most probably four."

The remarks of Mr. Glasse, on the preceding *examination*, form so complete a commentary, that I shall only request the reader's attention to the words Dr. Pym has marked in italics. Speaking of second attack, he observes, " Dr. Burnett, with all his efforts to contradict this established fact, brings forward Mr. Glasse as having seen, with all his experience, two cases; Mr. Amiel two cases; and Mr. Donnet one." This is really too much: instead of only bringing forward five cases of second attack, I have proved *thirty-four* well authenticated instances, independent of *twenty-two* communicated by Mr. Lea! I shall now indulge Dr. Pym with the result also of the reports of the medical officers of the navy, communicated to me by Dr. Harness in a letter dated the 28th of October. " *Numerous* instances appear in the various journals, examined by Drs. Grey, Tait, and myself, of patients having experienced a second and even third attack of the disease." I shall likewise ask Dr. Pym if he considers the testimony of Sir James M'Gregor as nothing? Are the seven cases so particularly mentioned by Mr. Short, who had been attacked the preceding year in Cadiz, and passed through the disease under the superintendance of Sir James Fellowes, nothing? Can there be any doubt of the many instances of second attack mentioned by M

Doughty in several parts of his interesting work? One of the second attacks alluded to by Mr. Glasse occurred in his own person! The reader is aware that Dr. Pym *suppressed* Mr. Donnet's case of second attack; and Mr. Amiel, independent of the two which came under his immediate care, states his being informed of several others, on good authority; but to have a fuller view of this part of the subject, I shall refer to pages 333-4-5 and from 467 to 471 of my work.

With regard to what he says of its sparing natives of a warm climate, I have already stated that I am of opinion, while they remain in a country of that description, they are commonly exempt from it or from a second attack; but let them pass one *winter* in England, and the immunity vanishes. When I mention England, I only allude to it as a northern climate; for even in Philadelphia (as we are informed by Dr. Rush) the negroes, who in the West Indies uniformly escape the yellow fever, were then attacked. It is evident from this, that it is the assimilation of habit to the climate which tends to prevent a first, and afterwards secures the person against a second, attack of the yellow fever. But even were Mr. Pringle's case to be decided as another disease, which I do not allow, how will this apply to Mr. Jacks and his wife, Mr. Keeling, Mr. Liublad, and Mr. Morrison, all of whom were attacked in strict quarantine?

He says my cause is so bad, that, "like a drowning man, I grasp at straws;" and that I attack Sir Joseph Gilpin and Mr. Frazer. As to the first, were I permitted to offer an opinion on my cause (as he terms it), I should say that the very *reverse* of this assertion is true, as he must have felt, and as any of his friends will inform him. With relation to the second, I must observe that I am not aware of having attacked either of the gentlemen he mentions. He has brought forward their testimony against mine; and I have only used (I trust not improperly) the privilege every person in this country enjoys of examining their evidence, and comparing it with that of others. This is not the first time Dr. Pym has tried to raise a crusade against me, and failed; and probably his efforts will be as futile on the present occasion. Nec timeo, nec sperno.

He next observes, "With a view of throwing discredit on the idea of the importation of the disease in 1813, he accuses Mr. Cortes of practising medicine by virtue of a certificate from me—a document," he says, "coming from such a source, certainly must be viewed with suspicion." "As to the certificate, I shall simply deny the accusation: he does not practise by virtue of any certificate from me."

In the first place, I have proved that the disease existed in the garrison previous to the period mentioned in the document alluded to. I do not *accuse* Mr. Cortes of stating what he did not believe to be true; nor will the context bear such an interpretation. As to Cortes, I know nothing of him personally; but having made inquiry, I was informed that he was a practitioner in Gibraltar; and that on the private practitioners being called upon by a Medical Board, during the fever of 1813, to produce their authority for practising medicine, he delivered in a certificate from Dr. Pym. This I was told by Mr. Glasse, one of the members of the Board just mentioned; and conceiving that no one was likely to be patronized by the gentleman first alluded to, who had any doubt of the contagious nature of the fever in question, I certainly viewed in this light the account with suspicion; but in no other. I have no doubt that a sick man was landed from a vessel lately from Cadiz; but I do not believe, holding the opinions I do, and with such testimony as I have adduced, that this man introduced the disease into the garrison. But, independent of this, the account from Mr. Cortes dates the introduction of the disease from Cadiz on the 11th of August; but Sir James Fellowes, then a resident in that city, *with all his attention*, knew nothing of the disease having appeared there till early in September; and even then he could only discover a few cases in the Spanish Hospital, under lock and key, to which *he* obtained access with some difficulty.

Regarding quarantine at Gibraltar in 1813, I certainly understood it to be general. I have likewise been led to believe that all vessels coming into that port, or anchorage, are visited by the health officers *before* they are allowed to hold communication with the garrison. If this be the case, why was this man allowed to land? If not, what is the use of quarantine?

Dr. Pym says he hopes he has established the contagious nature of the "Bulam fever," controverted my opinions, contradicted my assertions, &c. I know not what he may hope; but I think I can tell pretty well what the public will say of his controversions and contradictions. Even if he had succeeded in gaining every point he has attacked, it would not have rescued him from the imputation of giving *two different* accounts of the same disease and its treatment, or of garbling and suppressing the testimony of Mr. Donnet. He has again suffered a complete defeat, which will only serve to confirm more strongly the views I have taken of the fever in question.

As to what he says of contagion, and moderately cool air destroying it, I shall only observe, that this cannot apply either to the seamen in the Lazaretto in 1813, or to the men belonging to the foreign depôt, as mentioned by Mr. Amiel; nor to the men in the hospital of the Seventh Veteran Battalion in 1810.

Whenever Dr. Pym or his friends meet with a difficulty they cannot solve, they either fly to the "bilious remittent" or "cool air," as the case may be. These are very convenient and "capacious hypothetical casting nets, and thrown with a bold hand;" but they can have no weight against the authority of established facts.

⁎ The question in dispute is certainly of very great importance in a practical point of view; and as friends to humanity and science, we shall be happy to see the point settled. But we fear that the course the present controvertists pursue, is little calculated to attain that desirable object. Having published Dr. Pym's "Observations," that impartiality which we profess, and have endeavoured strictly to maintain, equally claimed the insertion of Dr. Burnett's "Reply." This duty being discharged, we trust that neither of those gentlemen, nor those who are immediately interested, will feel offence, if we decline being instrumental to the continuation of the controversy.

As some compensation to our general readers for the space occupied by this paper, we have been at the expense of giving *eight* additional pages to the usual number of the *Repository*.—Editors.

II.

A Case of Necrosis, successfully treated. By Edward Daniell, Surgeon-Apothecary, Weldon, Northamptonshire.

The rapid progress of medical science, the daily improvement of practitioners in the knowledge of diseases, and the permanent and real good such acquisitions hold out to the community, are matters highly worthy of exultation. The mind, fettered in the shackles of prejudice, at least as far as medical science has been concerned, has for centuries wandered round its limited boundaries without diverging from the beaten path, and a lethargic indifference as to the real causes of events in pathological phenomena has suspended the progress of truth, and retarded the acquisition of genuine knowledge. Once in an age, perhaps, an enlightened character has sprung up; but, like the faint gleams of a lonely star, his radiance has been expanded in the immensity of surrounding darkness, and, but for our improved knowledge, would for ever have remained sunk in the profoundest obscurity. It is a matter of pleasure, however, to every candidate for a niche in the temple of fame, that if he possess real talent, he will at least be regarded, however low his station, or however feeble his subject, if it have the merit of eliciting truth, and be productive of public benefit.

Induced by such reflections, I have to offer to the readers of the *Repository* an account of a case of Necrosis, in the treatment of which I have been particularly fortunate. Some time ago I was desired to visit a patient in this village, who complained of much pain in the knee, shooting down the leg; but upon examination I could discover no traces of any active disease, and imagined the symptoms were indicative of some chronic ailment. I was, however, deceived. The following morning the surface of the skin became inflamed to a considerable degree; and the inflammation rapidly increased, until it extended itself along the whole surface of the leg. Aperients, diaphoretics, refrigerents, and the antiphlogistic regimen, were enforced. By these means the erysipelatous inflammation was subdued: but a formidable local disease was now presenting itself. A deep-seated abscess was formed between the tibia and fibula, which came to maturation, and discharging, over the surface of the bone, a thin excoriating sanies, destroyed the periosteum, and consequently deprived the bone of its source of nutriment. The result may be easily conceived. A caries took place, extending itself eight inches in length, and occupying the whole circumference of the tibia; to remove which, openings were made, in order to divert the course of the matter, and injections of different kinds were had recourse to: for as nothing could possibly be expected but exfoliation, I was of course desirous of promoting it as quickly as possible. It must be recollected that the health of our patient had suffered materially during this period, and symptoms of hectic fever became visible; whilst the system in general was much deranged, from so extensive and unhealthy a discharge. I endeavoured to palliate urgent symptoms, and allay nervous irritability. With this view, from five to ten grains of Dover's powder were prescribed at bed-time, which relieved and tranquillized the spirits, and occasionally promoted gentle perspirations. Good nursing and regular attendance was certainly not wanting; a matter of material consequence in all diseases, and upon which, perhaps, as much dependance may be placed, and as much real good derived, as from medicine; particularly in cases of this nature, where all a medical man can do, until the disease becomes finally characterized, is to palliate and relieve existing painful and unpleasant symptoms. In process of time, the discharge became less virulent; and as this circumstance transpired, the other symptoms also abated, and the health and habit of the patient was much relieved.

Through the external ulcer, the bone, which appeared dark and shining, gradually became quite black; and, upon pressure with the probe, the length of the caries was visibly loose. A period of four or five months had elapsed from the commencement of the disease; and I was pretty confident that a confirmed necrosis would take place, if recourse was not immediately had to decisive measures. The dread of an operation for some time suspended its enforcement; and my patient being but a youth (aged fourteen), the decision was of course left to his parents, whose natural feelings were inimical to so painful an alternative. Seeing, however, that all other methods would be useless, and, unless the plan laid down was immediately enforced, either amputation, or a permanent sore leg, embittered with a train of melancholy symptoms, must be the consequence, they at length decided, and a day was fixed for the operation.

Operation.—Having procured a convenient operating table, the patient was laid in an horizontal position, supported with pillows; a longitudinal incision was commenced from the upper part of the carious portion of the bone, and carried completely down to the lowest part of it. I then carefully detached the integuments, forming two flaps, and exposed the whole circumference of the tibia: a quantity of new bone had formed, making a vaginal covering for the old and carious portion; so that it became necessary to detach this, which I was able to do with little difficulty. I then proceeded to extract the carious bone, which, although loose, yet was not very easily removed; and after having removed several pieces, there yet remained one, which I could not possibly extract without much hazard, it being deep-seated, and lying contiguous to the posterior tibial artery. Willing, therefore, now to put an end to our patient's misery, I merely brought the flaps of integuments into contact, without striving to unite them by the first intention, fully convinced that Nature herself would shortly throw off the portion of bone yet remaining; and in this hope I was not deceived; for in a few weeks I was able to extract it with my forceps. From this time the wound gradually healed; and the patient is now perfectly recovered. There is indeed a considerable curvature of the limb, and I fear it is ever likely to remain bent.

Observations.—In the treatment of necrosis it is evident prompt and decisive measures are both requisite and necessary, if it is the intention of the surgeon to perform a radical and permanent cure. The absurd systems of the antients are now, I believe, pretty nearly exploded. In cases of carious bone, we find in their writings different methods of treatment laid down; but their favourite remedies in all such cases appear to have been principally the caustic and the actual cautery, besides applications of gums, powders, and other irritating substances, intended to promote an inflammatory action, and thereby assist Nature in throwing off a substance which has become extraneous, and consequently a powerful obstacle in the cure of ulcerous diseases. The mischief generally produced by such a plan must be too obvious to require any explanation from me: the sound parts becoming injured, necessarily produce a more extensive disease, and frequently render all further means of little utility; and a mischief which was before, perhaps, of but slight consequence, is hereby rendered of a formidable and truly distressing nature.

From the case above recorded, the reader will discover the intention of the various steps of the progressive treatment. A confirmed caries becoming visible, and the whole length of the mortified bone being discovered by means of the probe, no other alternative than exfoliation could possibly be expected; consequently it was our aim to promote it as speedily as we could; and for this purpose dilute and gently stimulating injections were had recourse to: these, by a gentle excitement, very quickly promoted the desired effect; and the carious portion became perfectly detached from the remaining sound and good part. When this effect was produced, it then became a matter of infinite importance to remove the dead and mortified part before the process of ossification could completely envelope it; and an operation, according to the plan above stated, was the only rational one which presented itself to me. I did not find it needful to make use of the trepan or saw, as recommended by Mr. Bell in his Treatise on Ulcers; a pair of very strong forceps, with some force, being sufficient to extract the caries. I took care indeed to make my opening sufficiently large, and to expose the whole extent of the disease; by which means a greater command of the part was obtained, and by ocular demonstration I discovered every portion of diseased bone, and consequently could apply my instruments with greater certainty.

III.

On Scripture Midwifery.

In the last Number of the *Repository* (p. 365), in some remarks on Scripture Midwifery, the author gives two quotations which tend to fix nine months as the period of utero-gestation. Thinking this more than a matter of mere curiosity, and that it may in some degree mislead young practitioners, I venture to refer the author to another part of his favourite book of reference, the first part of the Seventh Chapter of the Wisdom of Solomon. There he will find, in a most sublime, impressive, and beautiful description of birth, the following observations relative to the term of pregnancy: "And in my mother's womb was fashioned to be flesh in the time of *ten months*;" and he will likewise see, that swaddling clothes were then used. These ten months must of necessity be moons, or forty weeks, or two hundred and eighty days; and there can be no doubt but this is the accurate term of utero-gestation. I have known two instances of forty-one weeks, and one of forty-one weeks and three days from the last possibility of conception. C.

IV.

Cases of Puerperal Fever treated with Spirit of Turpentine.

By JAMES MACABE, M.D. Dublin*.

THE many opportunities I had of investigating the causes of death in puerperal fever, led me to consider that it differed from the other inflammatory affections of the abdominal viscera only in the rapidity of its termination. From this view of the nature of the disease, I proposed to Dr. Douglass in the year 1808, that we should bleed the first patient who should be seized with that fever, (although it was directly contrary to the doctrine of bleeding in infectious fevers); and it happened, notwithstanding every precaution was taken, that a woman got the fever in the same bed in which another had died of it three or four weeks before. We immediately bled her very largely, and I followed it up by giving the usual purgatives. In twenty-four hours she was perfectly free from fever. I have since that time uniformly employed that remedy, and with the same success; nor did I ever lose one patient when it was employed in time. I think proper to premise these observations, not with a view to deduct from the merit of your very valuable remedy, but to account for the influence these facts had on my practice when I used the *turpentine;* and shall leave yourself to draw your own conclusion, how far each, or both combined, led to the fortunate results.

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* As these cases of puerperal fever were not transmitted to the Editors by the author of the communication, they conceive it necessary to publish the letters which accompanied them:

To the Editors of the London Medical Repository.

"Gentlemen, I beg to offer you a communication made by Dr. Macabe of Dublin, a gentleman who holds a very respectable rank in that city, and was many years assistant in the Lying-in Hospital. I hope it may serve to illustrate a system that I have adopted, which has met the fate of all innovations, but which I hope will in the end obtain the sole object I ever had in view in disclosing it, which is serving suffering human Nature. Your obedient Servant,

"*13th Oct.* 1816, *French Street, Dublin.* JOHN BRENAN."

Letter from Dr. Macabe to Dr. Brenan.

"My dear Doctor, From the shortness of the notice you have given me of your intended departure from Dublin, I can give you only a hasty sketch of some of the cases in which I have employed the spirit of turpentine. I have no hesitation in saying, that I would not have ventured to use it internally in human complaints, had I not heard of its safety and utility when employed by you. If these cases be of any use to you, I should think myself wanting in candour and honesty by withholding from you my opinion of an invention which is likely (when fairly tried) to be the best remedy ever known in *puerperal* fever: that the spirit of turpentine is a most valuable addition to the Materia Medica, and not only [supplies] a desideratum in puerperal fever, but also in trismus lactentium, in cases of worms, and many complaints arising from diminished action in the alimentary canal.

"I remain with great respect, &c.

"*Marlbro' Street.* JAMES MACABE."

The first case in which I tried the spirit of turpentine, was that of Mrs. K., Upper Dominick Street. She was attacked with puerperal fever on the 10th of June 1813, the third day after her lying-in. She is a woman of very full habit, and constantly slow bowels. I saw her but a few hours after the attack, and I ordered her to be bled until she could bear pressure on the abdomen. She expressed herself greatly relieved by the bleeding; however, I gave her two drachms of the spirit of turpentine in an ounce of the aqua menthæ sativæ and some syrup that night. When I called the next day she was perfectly recovered; nor could I discover that the medicine had the least sensible effect upon any of the secretions, as it affected only the bowels. I also remarked in this case, that the patient did not complain of any sense of heat in the stomach after swallowing that quantity of a medicine which would vesicate the skin if rubbed upon it; and that she slept better. The pulse was also more reduced than if she had taken a large dose of opium, although in my opinion she would have recovered after the timely bleeding and proper evacuations; yet freely admit, that I had not seen so evident and sudden a change from fever to convalescence by any evacuating plan before made use of; and although the manner of its action may not easily be accounted for, still the fact was striking and evident.

I had the good fortune of not meeting with another case of puerperal fever until the 21st of October 1814; when I was called to see a Mrs. B. in Thomas Street, who was in the last stage of that complaint. She had the facies Hippocratica. The abdomen was very sore to the touch, and greatly enlarged; her breathing laborious, and the pulse 130. The gentleman in attendance, who was very anxious for the recovery of his patient, and had employed every means generally used in this disease, had no hesitation in allowing me to make trial of turpentine in so hopeless a case. We prescribed it in the quantity and manner which I had given it to Mrs. K., but ordered that it should be repeated every fourth hour, unless it should disturb her in some evident manner. It however happened that they had not an opportunity of giving it more than twice, until she became perfectly easy, and slept soundly; so that when we went the next day, the abdomen was soft and free from pain, the tumefaction had subsided, and the pulse was natural. The consequence of this extraordinary change was, that the friends and attendants became quite elated, and were very confident in her recovery; but she died in about sixteen hours afterwards. During the time however that she lived, she was free from pain, anxiety, and those distressing symptoms under which she laboured before, and was perfectly sane in her understanding to the last moment. Bleeding in any form was not employed in this case; but I understand that she was very well purged and stupped. Enemas were also used, and the whole train of puerperal remedies, to no purpose; the turpentine did more in a few hours to alleviate the distressing symptoms which arise from the tumefaction of the abdomen, than any remedy I ever saw used in this stage of the complaint, or indeed heard of being employed by others. I venture to make this assertion with the more pleasure, because I often saw with regret the failure of other medicines in these deplorable cases, and from a conviction of the utility, if it went no further than relieving this one symptom; but I had an opportunity of giving it another trial the next day.

I was sent for in a great hurry to visit Mrs. Y. in Ransford Street; I found her with all the symptoms of this fever violently set in. It was the tenth day after having a very quick labour, from which her recovery was so good that she took the liberty of going to the dining room on the ninth, but got puerperal fever, a few hours before I saw her, on the following evening. I employed the same means which I had done before with Mrs. K. and with the same effect. I gave Mrs. Y. three drachms of the turpentine, being more emboldened by seeing it in the case of Mrs. Brady the day before, and in her it acted both as sedative and purgative, which operation I have not observed from it either before or since that time.

The next and last opportunity I had of using the turpentine was on the 11th of April last. I attended a Mrs. M. in Boot-lane, who had a lingering bad labour. In about thirty-six hours she was delivered by the pains (which, although very weak, were pretty constant,) of a live child. The next day she got puerperal fever; but the symptoms were not so violent as in the preceeding cases; I therefore omitted bleeding, and used the turpentine only, joined with purgatives. She recovered, but not so rapidly or so satisfactorily as either of the former patients. She differed from both the former patients in having a weak sickly constitution, being almost constantly ailing, and having very torpid bowels, generally requiring the assistance of laxative medicines. I shall leave it to others to decide what share the turpentine had in the recovery of this patient. If it be asserted that the purgatives alone would have recovered her, I can with truth say that I never saw a similar effect from their use alone, in the same time. However it acted (which was not sensibly), it seems to me to have a most salutary effect, and to be [supply] a very great desideratum in a case in which I was really afraid to employ bleeding, from the debilitated state of the patient. It acted probably as a diffusible stimulus on the alimentary canal, giving thereby efficacy to the purgatives; but at the same time it had a sedative effect upon the sanguiferous system. Whatever may be the theory of its *modus operandi*, of this fact of its efficacy I am perfectly convinced.

V.

An Account of a singularly painful Affection of the Appendages of the left Eye, from an uncommon Cause, successfully treated. By John Stevenson, Member of the Royal College of Surgeons, London, and Lecturer on the Eye and Ear, &c. &c.

On the 20th of May 1815, Miss H. Cole, aged seven, of a remarkably healthy constitution, without any known cause, was seized with a pain in the forehead, directly over the left eye, which gradually increased until it became most excruciating. The pain, having speedily attained its acmé, suddenly subsided, leaving her in every respect as well as before the attack commenced. After a few hours interval, the paroxysm returned in a similar manner; the disease assuming a perfectly remittent character, and recurring, at irregular periods, several times a day, its duration being from a few minutes to a quarter of an hour. Those fits which took place during the afternoon and evening were marked with the greatest violence and severity. Occasionally she awoke with the agonizing pain, which, having lasted for a very short time, wholly left her, when she generally fell again into a quiet repose.

After thus partially affecting the forehead for nearly a week, the seat of the complaint was transferred to the corresponding palpebræ; the pain, which was equally sudden and intense, commencing at the inner, and extending to the outer canthus, in the direction of the fibres of the orbicularis muscle. There was not the slightest uneasiness in the ball of the eye, nor any redness, nor even fullness of the vessels of the conjunctiva, nor increased secretion of tears. Neither were the integuments of the eye-lids, in any degree, discoloured.

By the suddenness with which the pain came on, its extreme severity whilst it continued, and its abrupt termination, it bore a striking resemblance to tic doloureux.

The only accompanying constitutional derangement, was an affection of the stomach, characterised by a sort of convulsive regurgitation by mouthfuls of the food she had recently eaten, without experiencing, at the time, any sensation of sickness or effort to vomit. The substances rejected consisted of little more than undigested aliment she had previously swallowed, unmixed with vitiated secretion or diseased bile.

She had taken, I was told, for about three weeks, under the direction of her apothecary, a draught of magnesiæ sulphas in infus. rosæ. ter die, by which the bowels were preserved in a perfectly open state; a blister had likewise been applied to the temple and behind the ear of the affected side, and a fomentation of poppy heads used as a local remedy.

These means not affording relief, she was recommended by her noble patroness, the Countess of L——, to my care. Knowing from experience, that many anomalous complaints of the organ of vision arise from sympathy with the primæ viæ, a due consideration of all the circumstances of this extraordinary case led me to suspect that it probably derived its origin from that source. With this impression on my mind, I directed an emetic to be exhibited in the evening, and a powerful dose of hydrarg. submurias. and jalap the following morning, requesting a strict examination of the respective discharges from the stomach and bowels. In order to appease the irritability of the stomach, a saline draught, cum tinct. opii. in actû effervescentiæ, was ordered, quartis horis, after the cathartic had produced its full effect.

Regarding the pain in the eye-lid as purely sympathetic, I forebore prescribing any kind of topical application until at least the nature of the disease should be more clearly developed, or its dependance upon gastric or intestinal irritation ascertained by the medicines above specified. Although by the action of the emetic nothing of an offensive nature was thrown up from the stomach, yet, after its operation, my little patient ceased to feel any return of the accustomed pain. Five copious slimy and greenish fœcal evacuations were the result of the purgative. In the *last* of these was *discovered* the *exciting cause* of this distressing malady; viz., a *large coral bead*, which *she must* have inadvertently swallowed when in the act of *untying*, by the aid of her teeth, a neck-lace of that stone, belonging to Lady L——, the thread of which, she *then* recollected, had broken in her mouth, which became in consequence filled with the disengaged beads.

After this nothing more was required, except a little medicine to restore the appetite and keep the bowels regular, the morbid symptoms having *entirely subsided.*

The above case is entitled to attention, in a practical point of view, on account of the singularly anomalous character of its symptoms, the detection of their exciting cause, and their successful removal. In the course of my exclusive practice in the treatment of diseases of the eye and ear, I have more than once met with instances of verminous and other kinds of intestinal irritation producing sometimes ptosis of the superior palpebræ of one or both eyes, and occasionally spasmodic affections of the muscles and consequent strabismus or distortion of the globe of the eye. But in none of these cases did any similar severe remittent pains prevail, as in the one under consideration. This statement affords, also, an additional illustration to those already on record of a not very uncommon, though not less important, pathological fact, relative to the close sympathy which is now and then proved to subsist between the eye and its appendages and the primæ viæ; a circumstance never to be lost sight of in the treatment of ocular diseases. It points out, likewise, the great benefit that may be rendered to the suffering patient, and the credit that may be gained by the practitioner from his knowledge of the laws of sympathy; a study which I would beg, in an especial manner, to recommend to those who are just entering upon their medical career. Had I not been aware how greatly the visual organ depends for many of its morbid phenomena upon visceral irritation for their primary cause, I might have fruitlessly persevered in applying remedies to a part, which, although *apparently* the true seat of the complaint, was found to be only secondarily and sympathetically affected. In the mean time, had the symptoms been allowed to remain long protracted and uncontrolled in their progress, to say nothing of the exquisite sufferings of the patient during their continuance, they might have ushered in still more alarming ones, and have terminated eventually in the most disastrous, if not fatal, consequences.

I will just suggest, by way of conclusion, that from the irritable condition of the stomach, and the cessation of the pain immediately subsequent to the operation of the emetic, it is not unlikely that the extraneous substance, which was found to occasion the disease, had lodged in that viscus, and that it was protruded through its pyloric extremity into the duodenum by the effort of vomiting, and finally expelled from the alimentary tube by the powerful and efficient drastic cathartic.

VI.

Case of Death from Oxalic Acid. By George Johnson, Member of the Royal College of Surgeons, and of the Society of Apothecaries, London, and Secretary to the Medical Society of Guy's.

Early on Sunday morning, November 17, 1816, I was suddenly called to see Rachael Fage, a woman about twenty-five years of age, who had expired just before I arrived at her house.

I was informed that her husband had, the evening before, picked up, near the King's Bench, a small paper parcel, containing about an ounce of salt, and presented it to his wife, who was with him, and who, concluding it to be Epsom salts, determined on taking it the next morning, having for some days before had a bowel complaint. As soon as she got up, therefore, she dissolved it in water in a tin pot, and, pouring the solution into a cup, drank it off. In a very short time she complained of pain, and vomited up a small quantity of fluid, threw herself on the bed, and expired within a quarter of an hour after swallowing the potion. Nearly a quarter of an ounce of the acid remained undissolved in the cup; and this, on being submitted to the usual test, proved to be oxalic acid.

Dissection.—The body was opened three days after death. The appearances were such as were to be expected from the action of so concentrated an acid. The cuticular coat of the œsophagus peeled off with the slightest effort; the blood-vessels of the inner coat of the stomach appeared as if injected with a carbonaceous substance; the stomach itself was in some parts so completely perforated, that its contents had escaped into the cavity of the abdomen: whilst the other part was so tender, that it tore with the slightest force. The rugæ were just visible, but were converted into a pultaceous mass, and could be wiped off with the finger. The spleen, at that part next the stomach, meeting with the acid, had also become in part destroyed.

Observations.—I am not aware that any remedy, however speedily administered, could have arrested the caustic effects of this acid on every part with which it came in contact; but large dilution with magnesia, milk, oil, or alkalies, are obviously the means that would have presented themselves to practitioners as proper to be employed.

I am desirous of availing myself of the extensive circulation of the *Repository* to put at least the medical public on their guard against the pernicious effects of an article, which, from the number of domestic purposes to which it is applied, has ceased to be considered as a poison; and I cannot but think it a duty incumbent on the guardians of the public health to caution druggists from indiscriminately vending this article; many of whom, I am persuaded, are completely ignorant of its deleterious effect. This becomes the more necessary, from the resemblance of the oxalic acid to the sulphate of magnesia, and from considering that within these few years many accidents of this nature have occurred.

⁂ This is the fourth case of poisoning by oxalic acid recorded in the *Repository*. In vol. iii. p. 380, the reader will find a very interesting case of this kind detailed by Mr. Robarts; and some very elaborate experiments on the nature of this acid, with observations on the means of obviating its effects, by Mr. A. T. Thomson, one of the *Editors*; the conclusion drawn from which was, that a mixture of chalk and water, by producing oxalate of lime in the stomach, when oxalic acid has been previously swallowed, may be regarded as the antidote of that acid, if exhibited very soon after the poison has been taken. A similar fatal catastrophe happened at Kemsey, Worcestershire, early in November; when death ensued from taking three tea-spoons-ful of this acid, instead of common purging salts. Nine accidental deaths from this poison, within two years and a half, have come to our knowledge; and therefore some extraordinary precaution ought to be adopted in regard to the vending of this salt; which vulgarly bears the name of acid of sugar. As it is always dissolved before being applied to the various domestic purposes for which it is now used, might it not be kept and sold in a state of solution? by which the possibility of confounding it with Epsom or other salts would be prevented.—EDITORS.

AUTHENTICATED CASES, OBSERVATIONS, AND DISSECTIONS.

XL.—*A singular Case of Somnambulism*[*].

"AT your desire, my dear son Samuel, I have collected together some of the most striking particulars, which I then noted down, and a few others, which my own and your good mother's memory have been able to retain, of a somnambulent gentleman, who was one of our family in the year 1801.

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[*] This letter was put into our hands by a Practitioner of great respectability, with the assurance that he could vouch for the authenticity of the facts it details, being personally acquainted with the writer, who is a Clergyman in Holland of high character and undoubted veracity. The facts are of so very singular a description, that, notwithstanding the source from which they proceed, we conceive it proper to give them to our readers accompanied by this testimony: we leave them to the degree of credence to which they may be considered entitled.—EDITORS.

"A few days before he commenced here his somnambulations, he said to Mr. H., who slept in the same room with him, that he must not be alarmed if he found him sometimes walking in his sleep. Mr. D. (for by that name we shall speak of him) had been in our house but a few weeks, when one night, hearing an unusual noise, I rose up to discover the occasion of it. I found Mr. D., in his sleep, taking down some of his books, which had been sent him by his parents. I staid in the room some time, not chusing to wake him on the sudden. On further examination, I perceived he was employed in making a catalogue of them quite in the dark, and with as much precision as I could have done with a light; making no mistakes with regard to the titles of the books, the names of their authors, their respective editions, and where they were printed. On letting one of the books fall, the noise appeared to have startled him, and he hastily retired to bed: I retired also. In the morning, when he saw some books lie on the table and the catalogue, he asked who had done that. Nor could he be easily persuaded that he had done it himself, till he saw his hand-writing.

"As he was a pupil of the Erasmus School, he was one day much perplexed that he had not prepared his Latin theme; he rose in the night and completed it with great correctness; he thought I had done it for him, till I assured him I had not, and referred him to his own hand-writing. At another time, when he was to deliver a Latin oration in public, we heard him in his somnambulent state rehearse it aloud, as though the curators of the school were present; and as he was feeling for the desk to lay his thesis upon, Mr. H. stooping a little before him, he laid it upon his neck, supposing it to be the rostrum. When he had finished his oration, he bowed to the audience and to the curators, as if present, and then retired.

"One day, being somnambulent at the hour of his going to school, he wrote a letter of apology to the rector in as good Latin as if he had been awake. Hearing your sister, one evening after he was in bed, playing on the piano forte, he rose up and brought a music book, pointed to a favourite piece, which he laid before her to play, and when she had played it, he clapt his hands with the rest of the family, saluted your sister, and hastened out of the room, perceiving, as we thought, that he was not dressed. When in his somnambulent state, nothing disturbed him so much as the rattling a bunch of keys. He was playing with me one evening a game at chess, but some person coming into the room who was not one of the family, he shewed his usual sign of displeasure, which was by snuffing

men into confusion retired.
s without stockings, and your
ight probably catch cold, he re-
ent stockings on." When playing
when they gave him a wrong card,
they gave him back the right one.
ight that he must fight a duel with one
udents at Utrecht, and asked Mr. H. to
our was fixed, the ground measured, and
given, down fell Mr. D. as mortally wounded,
be put to bed, and a surgeon to be sent for
s a surgeon of our acquaintance (a French
desired to see him in his somnambulent state,
im. When he asked Mr. D. where he was
e put his hand to his left side, saying "here, here—
e ball." "I am come to extract it," said the Sur-
but before I begin the operation, you must take some
drops which I have brought with me." After that,
g some great pressure upon the side where Mr. D. said
s wounded, the Surgeon said the ball was out. Mr. D.
t his side—"so it is," he said; "I thank you for your
lful operation. Is my antagonist dead?" he asked; and
hen they told him he was living, joy beamed in his countenance; and it appeared as if that joy awakened him. When he came to himself and they told him what had happened, he would scarcely believe it, but begged it might not be mentioned

"Some time after this, hearing in the night some movement in his room, I went with a light to see what he was or had been doing. When I found, to my great surprise, the door taken off its hinges, laid on the ground, raised a little at one end, and he himself stretched out at length upon the door as a corpse, his head resting upon a pillow, a night-cap over his eyes, and his body covered with one of the sheets of the bed. At this sight I was startled, as you may well suppose; but recollecting a circumstance that might have suggested such an idea, I became soon composed. We had been talking, in his hearing, of a person in the Hague having been at an undertaker's to bespeak his own coffin, though apparently in good health; and it was added, that he slept in it every night; so Mr. D., we suppose, metamorphosed this door, in his imagination, into a coffin, and that he himself was a corpse. When he awoke and found what he had done, he repeatedly, and with great earnestness, pressed us neither to tell Mrs. H. nor your sister a syllable of what had happened. And if he had not himself seen the confusion and disorder of the room, would probably not have had the least recollection of it, which happened in all other cases of his somnambulation.

"Being invited one day to breakfast with Professor H., his uncle, the next morning, at eight o'clock, he rose about seven to prepare his lesson for the school; but the moment he perceived it was time to go, he went down stairs, and finding the street-door open, the maid then washing the steps, he jumped over her and the pail, and avoided many casks then in his way, though his eyes were shut; neither did he run against any person; and was at his uncle's door exactly at the appointed hour. Mr. H. immediately followed him, and could scarcely overtake him before his arrival at his uncle's house. His uncle perceiving how he was, did not attempt to awake him; but as he had some little doubt in his mind of what he heard of his nephew, placed a book before him (a Latin book), and desired him to translate a passage of it into Dutch. He sat down and completed what his uncle had desired, his eyes apparently closed; and, besides that, the window-shutters of the room were also closed, by Mr. H.'s desire, who went with him into the house, and staid to breakfast. If I relate one act more of his somnambulism, my paper will be full. One night he said he had something of great consequence to impart to me; but it must not then be divulged: he must speak with me alone. He came, he said, as an ambassador from England; and desired me not to be cast down (this country being then in a state of confusion); for he assured me that the Orange Family would one day be restored.—*Cum multis aliis.*

"To those of your auditors who are not disposed to give credit to this narration, you may say that the narrator himself would probably have been as sceptical as they, if these facts had not occurred in his own family."

XLI.—*Case of Purpura Hæmorrhagica.*

THE case of Purpura reported in the REGISTER of DISEASES for August and September, which occurred in a boy about twelve years of age, was a strongly marked case of that species termed by Dr. Willan purpura hæmorrhagica. The body and limbs were spotted with numerous purple-coloured petechiæ, about the size and form of a common flea-bite; which had, about a fortnight before, first made their appearance. Hæmorrhage from the nose had repeatedly occurred; and on the day or two previous to the Reporter seeing him, there had been a considerable discharge of blood from a small purple spot upon the instep, which was with some difficulty restrained. In addition to these symptoms, there was great difficulty of breathing, accompanied by a short dry cough, universal anasarca, and a sense of tightness about the epigastrium; which, when pressed, occasioned considerable uneasiness. His pulse was quick and sharp; skin hot and dry; bowels very irregular and generally constipated; and the urine was secreted in very small quantity, and of a high colour. Eight ounces of blood were taken from his arm, which flowed in a very rapid stream; and almost immediately relieved the oppressed state of his breathing. A cathartic powder was then given to him, consisting of calomel and jalap, which procured the discharge of several dark-green coloured stools, and a blister was applied to the epigastrium. From this time he had no return of hæmorrhage; and after the exhibition of three or four doses of the cathartic powder, with an interval of a day between each dose, the petechiæ gradually disappeared; the intestinal secretions became restored to their healthy state; the urine became increased in quantity; the anasarca disappeared; and in about ten days from his applying for relief, he was considered convalescent.

The above case seems to be important only inasmuch as it may assist, with several others upon record, in furnishing data, which may remove that obscurity in which the pathology of this disease is involved.

XLII.—*A Case of Epilepsy.*

A MAN, previously subject to slight attacks of epilepsy, complained, on the 30th of September, of vertigo; thirty ounces of blood were immediately abstracted, and a brisk cathartic exhibited. At five o'clock on the following morning, a very severe epileptic paroxysm attacked him, and immediately a similar quantity of blood was taken away; his head was shaved, a large blister applied, and a strong purge was administered. But every remedy was fruitless, as he died at eleven A.M. On opening the head, there were found three ounces of serum in the left lateral and the fourth ventricle.

This case is remarkable only from its speedy fatal termination and the quantity of fluid effused, as there did not elapse a greater space of time than fifteen or sixteen hours from his complaining of vertigo to his death. It is therefore most probable, that a part of the fluid had existed previous to the attack, and that an increase of it caused his death.

XLIII.—*A Case of Infantile Remittent Fever.*

THE fatal case of remittent, recorded in the last Register, occurred in a child of fourteen months old. It terminated on the second day after the Reporter saw it, which was on the seventeenth day of the disease. The hands and feet of the child were swelled and inflamed, and the fingers and toes contracted; the remissions were short, the sleep interrupted, and the temper of the infant irritable to a great degree. The bowels were irregular, and the stools of an aspect which might be termed hydrocephalic, being dark green, glazed, and peculiarly offensive; but there was not any dilatation of the pupils, nor any other symptoms of cerebral compression. There was great emaciation, and when the child was first seen, it had the true *facies Hippocratica;* in six hours afterwards, convulsions came on, and continued, at intervals, until dissolution took place.—*Dissection* displayed a diseased state of the liver, and mesenteric glands. A quantity of coagulable lymph was effused on a highly vascular pia-mater; and the ventricles contained about two ounces of serous fluid.—T.

PART II.

ANALYTICAL REVIEW.

I.

A Treatise on Uterine Hæmorrhage. By DUNCAN STEWART, Physician-Accoucheur to the Westminster General Dispensary, &c. 8vo. pp. 151. London, 1816. Underwood.

THE discovery of an effectual method of restraining uterine hæmorrhage, is certainly an object of great importance, whether we regard the credit of that branch of the profession more particularly connected with the process of parturition, or the safety of the female part of society, at a moment peculiarly demanding all the tender interest which their situation naturally requires. The opinions of Dr. Stewart of the efficacy of opium in uterine hæmorrhage are already known to the profession. The intention of the Treatise before us is the elucidation of that practice, and the removal of "the prejudices which theory may have advanced against the use of the remedy."

In the introduction Dr. Stewart endeavours to determine the muscular nature of the uterus, not by tracing out the fibres, or their course in the structure of the organ, but from the analogy "between its action and that of some of the other involuntary muscles." It resembles these in being excited to contraction by its contents, and in that action being continued until its cavity is emptied; "in retaining itself in a contracted state until that natural change in the œconomy of its parts occurs, which requires relaxation; and in being likewise affected by those cases which produce morbid action in muscles." But the resemblance of the uterus to other muscular cavities, which particularly characterises it, is the sympathy subsisting between its coats and sphyncter, which relaxes when the action of the coats for the evacuation of their contents is excited; and the irritation or forcible dilatation of which produces an immediate effort to contraction in the coats.

The first section of the Treatise is intitled, *Observations on the Practice generally employed in Uterine Hæmorrhage.* Our author first points out the circumstances which distinguish uterine hæmorrhages from other morbid discharges of blood; the want of success which so often attends the ordinary mode of treating them; and the indecision which this produces on the minds of young practitioners.

With regard to the propriety of puncturing the membranes in uterine hæmorrhage, in order to suppress the discharge by the contraction of the uterus, our author suggests the necessity of previously considering, maturely, the three following questions:

> " *First;* Whether by puncturing the membranes before the os uteri is dilated, we retard or accelerate the delivery of the child?
>
> " *Secondly;* Whether by puncturing the membranes before the os uteri is dilated, we can depend upon it as a certain immediate means for suppressing the hæmorrhage?
>
> " *Thirdly;* Whether by puncturing the membranes before the os uteri is dilated, we do not often destroy the chance of saving the child's, and sometimes even the mother's, life?"—p. 11.

In answering the first query, he remarks that the contraction of the uterus is not an immediate result of the rupture of the membranes, as fourteen days have sometimes elapsed before that event has taken place; and when the liquor amnii escapes before the os uteri dilates, the labour is always protracted. In reply to the second, he states his opinion that, " the evacuation of the liquor amnii can be of little service in restraining uterine hæmorrhage;" for as this can only occur by the detached portion of the placenta pressing against the child's body, much must depend upon chance. As to the third query, he contends, that, even in the event of the evacuation of the liquor amnii checking the hæmorrhage by the contraction of the uterus, the difficulty, if not impossibility, of turning the child in this state, should it preternaturally present, may endanger both the life of the mother and that of the infant. Dr. Stewart, indeed, lays it down, as a general rule of practice, that " the plan of rupturing the membranes before the os uteri is completely dilated, is neither safe nor rational."

In the second section, *the Causes and Treatment of those Cases of Uterine Hæmorrhage, which occur in the early months of Pregnancy*, are investigated. Uterine Hæmorrhage, in the first months of pregnancy, may occur from "any cause which produces a considerable degree of derangement of the uterine system," sufficient to separate the connection between the uterus and the ovum. Pain of the loins, hysteria, and other symptoms of morbid irritability, sometimes accompany the discharge. If rest, and the other means usually employed, fail in checking it, Dr. Stewart recommends "a cold clyster, consisting of one pound of lime water and one or two drachms of laudanum." When abortion is attended with very profuse hæmorrhage, stuffing the vagina with soft rag or lint soaked in oil, and retained by a firm wet compress, and a T bandage, is advised, in conjunction with rest and cold: but as a permanent stop to the discharge can be effected by the contraction of the uterus only, stimulating clysters should be given, so as to excite the organ to expel its contents; but, after removing the bandage and compress, the plug must be allowed to remain until it is expelled. If the debility, from the extent of the discharge, be great, whilst the above means are employed, our author recommends the exhibition of opium, in large doses, in either a liquid or a solid form:

> "For whilst it quiets," he observes, "the anxiety which the patient's apprehensions are apt to produce, it allays the state of general irritation, which always attends a sudden diminution of the powers of life, supports the strength without accelerating the action of the heart and arteries, and never prevents the due contraction of the uterus."—p. 37.

This practice is illustrated by a well detailed case.

In the third section, "*the Causes and Treatment of Uterine Hæmorrhage when it occurs in the last months of Pregnancy, and during labour, till the child is delivered*," are next considered. The principal cause of hæmorrhage, at this period, is the partial or entire separation of the placenta, which is occasionally attached over the cervix and os uteri, in which case the discharge "always precedes the expulsion of the fœtus," and the full period of gestation is seldom completed: or, if it be completed, the hæmorrhage increases in an alarming degree as the os uteri dilates. In deciding on the treatment, "the effects produced on the general system," Dr. Stewart properly remarks, "rather than the quantity of blood discharged, ought to be considered;" as some women cannot support the loss of a few ounces without being in danger, whilst others seem to suffer little, and the process of gestation proceeds without interruption. The system, also, bears the loss of blood better when it takes place gradually, than when it is suddenly lost. The symptoms indicating that the general system has suffered to a great degree are thus described:

> "The countenance is ghastly, and expressive of great anxiety, the lips are pallid, there is oppressive sickness and vomiting, the pulse is fluttering, the patient complains of giddiness, dimness of vision, ringing noise in her ears, thirst, pain in the extremities, and pants for breath. If the discharge continues, the pulse becomes more feeble and irregular, there is a low delirium, with a state of great restlessness, the pulse is not to be felt, or only at intervals, convulsive tremours, distortion of the features, and deep inspirations, repeated at long intervals, generally precede death."—pp. 46, 47.

In describing the treatment, if the symptoms be not very urgent, and the hæmorrhage occur before the full period of gestation, our author disapproves of stuffing the vagina, as it is apt, by the irritation of the os uteri, to bring on premature labour; which is not desirable unless there be symptoms of extreme debility. But if immediate delivery be requisite, he recommends, before commencing it, to give four grains of opium, or one hundred drops of laudanum; and as in uterine hæmorrhage the effects of opium are very fugitive, the dose should be repeated and increased according to the degree of irritation and urgency of the symptoms; combining it with aromatics, if it be rejected when given alone. Much also depends on the mode of turning and extracting the child.

> "In turning and delivering the child, the hand well oiled, and formed into a conical shape, must be cautiously introduced into the vagina, carrying it steadily forward, with a semirotatory motion, but resting during the remission of the labour pains; the os uteri should be slowly and completely dilated in the same manner; the placenta should be separated at one side, the membranes ruptured, and the child's feet grasped and brought into the vagina."—pp. 50, 51,

Several cases are described to illustrate this practice.

When the hæmorhage arises from accidental causes, before the delivery of the child, or is, as it has been termed *avoidable*, there is seldom any pain, and the discharge is very profuse. But the prognosis in this case may be generally favourable, unless the liquor amnii be discharged, and the uterus contracting irregularly, while the os uteri is still undilated and in a rigid state. When the debility is great from the discharge, and delivery is necessary, our author recommends large and repeated doses of opium before the attempt is made to dilate the os uterus, which may be quickly done, and the membranes ruptured if it be found soft and yielding; but if the os be rigid the delay occasioned by a slow and cautions dilatation will not increase the danger, as the hæmorrhage will be somewhat restrained by the contraction of the uterus. If, however, the membranes have been previously ruptured, while the os uteri is undilated and rigid, we are recommended to stuff the vagina until the dilatation be more complete, unless symptoms of internal hæmorrhage should be indicated by the swelling of the abdomen, when the child must be turned and immediately extracted. In this situation also, opiates in large doses are said to be beneficial, and their efficacy is illustrated by the detail of two cases, one of which has been already before the public*, whilst a third, that terminated fatally, is introduced to exhibit the danger of trusting too long to the natural efforts in cases of uterine hæmorrhage.

In the fourth and concluding section of the Treatise, *the Causes of and Treatment of Uterine Hæmorrhage, when it occurs after the child is delivered*, are investigated. Hæmorrhage, at this time, may arise from the uterus not contracting immediately after the detachment of the placenta; from irregular contraction of the uterus; or from morbid adhesion of the placenta. The symptoms indicating the existence of each of these causes, and the prognosis to be formed from them, are perspicuously detailed by our author.

When the hæmorrhage arises from torpor of the uterus, it may occur without much visible discharge, owing to the vagina being plugged up with a clot, and the uterus yielding until it becomes completely distended.

> "The first warning which the practitioner generally has of such an accident, is the patient complaining of faintness; and, on examination, he finds her countenance ghastly, and expressive of the greatest anxiety, her abdomen very much distended, her extremities cold, she labours for breath, sighs convulsively, and expires."—p. 99.

When hæmorrhage, from torpor, have occurred in former labours, it should be anticipated; and a broad bandage applied as soon as the labour commences, to be drawn tight immediately after its conclusion; while at the same time "one hundred drops of laudanum should be given," and the uterus irritated to contraction by the introduction of the hand well oiled, which should be retained until it has completely contracted. If syncope occur, which is always to be dreaded, cold air must be admitted into the chamber, the head laid low, stimulants applied to the nostrils; and if fluids cannot be got into the stomach, warm cordials with laudanum, given in large quantities: and as soon as sensibility returns, advantage should be taken of it, to excite the contraction by gently moving the hand in the uterus. The application of cold, Dr. Stewart conceives, cannot be trusted unless the contraction of the uterus be nearly effected. The application of spirits has been found useful, both from the evaporation producing cold, " and by stimulating the skin, it has been supposed, that by sympathy it also stimulates the uterus." In these cases the repeated exhibition of laudanum is productive of the greatest benefit; and some idea of the extent to which it may be given, may be inferred from the following extract from the last three cases elucidative of this part of the Treatise.

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* *Transactions of the Medical and Chirurgical Society*, vol. iv.

> " The patient did not appear to be out of danger till five hours after I first saw her; and from eight in the evening till five o'clock on the following morning, she had taken above an ounce and a half of laudanum with a pound and a half of brandy. The opium was continued in doses of fifty drops, night and morning, for the six following days, and she recovered gradually to a state of perfect health."—p. 122.

But if opium be useful in these cases, it is much more so when the hæmorrhage, after delivery, arises from irregular contraction of the uterus; in which case, an opiate is advised to be given before the hand is introduced into the uterus, with the view of exciting a more regular contraction.

When the hæmorrhage occurs from a change of structure and adhesion of the placenta, the hand must be introduced, and pressure made on the adhering part; but no attempts are to be made to tear the placenta away. Sometimes, in spite of the best practice, a part remains, and the putrefaction induced to throw it out excites irritative fever. In this case opium combined with camphor and wine is highly recommended; and, as local applications, injections of green tea or chamomile flowers must be thrown in; whilst the external parts are bathed with a solution of acetate of lead or brandy and water. Our author concludes with some general observations on the effects of parturition on the system, particularly when accompanied with hæmorrhage; and on the general effects of opium; which we think ought rather to have preceded than followed his practical observations.

Upon the whole, however, we think Dr. Stewart has made good his point; and is certainly entitled to the thanks of the profession, both for the improvement he has brought into notice, and the candid elucidation of the practice, which he has laid before it in this Treatise.

II.

A System of Physiological Botany. By the Rev. P. KEITH, F.L.S. &c. &c. pp. 1004. 2 Volumes. Plates. London, 1816, Baldwin and Co.

Elemens de Physiologie Végétale et de Botanique. Par C. F. BRISSEAU MIRBEL, de l'Institut. pp. 925, et un Tome des Planches. Paris, 1815.

(Continued from page 328.)

HAVING examined the external structure of the vegetable body, Mr. Keith occupies his second book with the description of its internal structure, *or the Anatomy of the Plant.* He considers the external organs as resolvable into constituent and primary; the first of which he regards as comprehending two distinct sets of organs, the decomposite and the composite; and the second only one set, the primary or elementary.

This part of the subject is treated by M. Mirbel in a more complete and masterly manner, than in any treatise relating to phytological science which we have yet seen. We do not mean, however, by these observations to depress the merit of Mr. Keith; for the subject is peculiarly M. Mirbel's own; and he has marked out not only the boundaries, but the interior of the country he has explored, with a degree of minute accuracy not likely to be surpassed. But to proceed:

In detailing the dissection of the decomposite organs, Mr. Keith takes them "in the retrograde order of the seed, pericarp, flower, leaf, gem, and caudex, or branch, stem, and root, with their decomposite appendages." In the examination of the *seed*, he follows Gærtner, an author which M. Mirbel also appears to have attentively studied; and both after him divide this organ into two principal parts easy to be distinguished, the integuments and the nucleus.

Mr. Keith considers as integuments the *testa* and *subtesta*; but Mirbel adds to these the *arillus*, which we have already noticed under that part of Mr. Keith's arrangement that treats of the appendages of the seed, and stated his reason for placing it there. We confess we have some difficulty in making up our minds as to the propriety of classing it as a seminal tunic; and if we were to regard merely that part of M. Mirbel's definition of it, which says "qui ordinairement se détache de la graine mûre, en entier ou en partie," we should certainly decide against him; but the arillus is sometimes persistent, in which case we know not how it can be considered otherwise than as a seminal integument. Instead of the term *testa*, applied by Gærtner and retained by Mr. Keith, to the exterior coat of the seed, if we do not consider the arillus as such, M. Mirbel has adopted *lorique* (lorica), and *tegmen* instead of *subtesta*, the term which Mr. Keith has given to the interior integument. These two coats, in the majority of instances, adhere by means of cellular matter, as in the garden bean; but in some instances they adhere only at the hilum, or are altogether distinct, as in ricinus, nymphea, &c. noticed by M. Mirbel. Mr. Keith regards as the *chalaza* that part on the subtesta where the vessels of the funis, after having perforated the testa at the hilum, begin to diverge; but M. Mirbel considers the term as applicable to one portion only of that part. The whole he denominates *prostypum*, comprehending under it the rapha and the chalaza. The rapha is that part of the prostypum which separates immediately from the hilum, piercing the testa or loric in an oblique direction, until it appears upon its interior surface at a greater or less distance from the hilum. At this point its extremity dilates, attaches itself to the subtesta or tegmen, and forms the chalaza, which is sometimes coloured, as in the orange pip. The Chalaza was regarded by Gærtner as an internal hilum.

Mr. Keith divides the nucleus of the seed into the albumen, the vitellus when it is present, and the embryo. M. Mirbel, instead of albumen, adopts Ventenat's term, perisperm; but Mr. Keith justly objects to it, "because the organ it is meant to denote is also very often surrounded by the embryo, or nearly so, and situated in the centre of the seed, as in the Caryophyllæ and others." In noticing the consistence of the albumen, we are surprised that Mr. Keith, on the authority of Smith's Introduction, should state that that of the date is as hard as a stone. It is rather harder than horn, but is easily cut with a knife. The *vitellus*, a name imposed by Gærtner, the next part of the nucleus described by Mr. Keith, is regarded as a cotyledon by M. Mirbel, and not separately noticed by him. It is readily distinguished from the albumen by its substance being incorporated with that of the embryo, whereas the albumen is attached by mere adhesion and separable without injuring the organization of the embryo: but as there is no satisfactory rule for distinguishing the vitellus from a cotyledon, we are much inclined to accord with M. Mirbel in the propriety of regarding it as a cotyledon. In the grasses, in which it appears as a scale placed between the albumen and embryo, although it remains under ground, yet, it does not decay until such time as the leaves are capable of performing their peculiar functions.

In noticing the embryo generally, Mr. Keith states that it "is found single in all known seeds except the misletoe, which contains evidently two distinct and entire embryos;" but this kind of superfœtation is not constant in the misletoe, nor very uncommon in several other seeds, being seen, for example, in Asclepias *nigra*, Allium *fragrans*, Carex *maxima*, Triphasia, &c. quoted by M. Mirbel; who adds, "on en compte jusqu'à huit dans l'oranger." This author employs the term *blastema*, for the embryo abstracted from the cotyledons, an appellation certainly superior to Linnæus' term *corculum*, and perhaps also to that of *plantlet* employed by Mr. Keith; as the cotyledons, strictly speaking, are as much a part of the young plant as the plume and radicle.

Mr. Keith states the cotyledon to be

> "that portion of the embryo that encloses and protects the plantlet, and springs up during the process of germination into what is usually denominated the seminal leaf, if the lobe be solitary; or seminal leaves, if there are more lobes than one."—p. 258.

M. Mirbel says,

> "les cotylédons peuvent être définis les première feuilles visibles dans la graine."—p. 57.

Now we consider both of these definitions objectionable in stating, the passing of the cotyledon into a *visible seminal leaf* as the chief characteristic of that organ, while it is well known that in many instances it never rises above the surface of the ground; a circumstance which Mr. Keith himself notices in the arrangement of cotyledons into *epigæan* and *hypogæan**. How far it performs the function of respiration or the elaboration of gasses when it remains under ground, we cannot pretend to determine; but if we may conclude from analogy that such is the case, the cotyledon may be accurately defined, that portion of the embryo which forms the first respiratory organ of the plant.

Mr. Keith dissents from Sir J. E. Smith, who regards the *palmæ*, *orchideæ*, and *liliaceæ*, as improperly placed amongst the monocotyledonous plants; while he supports the opinion of Gærtner that the sheath which invests the plantlet in the grasses is their cotyledon. He regards, also, merely as lobes the numerous cotyledons of Pinus and other polycotyledonous plants. We are willing to admit that the seed of Lepidium *sativum*, which he quotes, is dicotyledonous, the cotyledons being lobed; but on what grounds the three cotyledons of Cupressus *pendula*, the four of Pinus *inops*, and the twelve of Pinus *pinea*, not to mention others, can be regarded as lobes we are at a loss to conceive. Mirbel properly regards them as cotyledons.

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* The *epigæan* cotyledon, as its name implies, is the true seminal leaf rising above the surface of the ground, whilst the *hypogæan* remains under it, often inclosed in the seminal tunics, as in the walnut.

Mr. Keith leans to the opinion of Mr. Knight, that the part usually termed the *radicle*, in the embryo, is merely the part from which the radicle proceeds, and not the radicle itself; and supports the opinion, by stating that its external portion is merely "a prolongation of the lobes of the cotyledons;" but, admitting this fact, we cannot see how it alters the opinion that it is, as Mirbel describes it, "la racine dans la graine." There is nothing particular to notice in the description of the plume in either author. Mr. Keith defines it "the summit of the infant plant;" Mirbel, "the rudiment of those parts of the plant which rise above the surface of the ground." The latter author describes also, under the term *collet*, collum, neck, the part intermediate between the plume and radicle, which is not noticed by Mr. Keith.

> "When the radicle and the plume," says M. Mirbel, "are united at their bases, the neck (collet) is only an imaginary line represented by their point of union; but when these are separated from each other, the portion between them is the neck, the form of which varies in different species."

As examples of the former, he refers to the germinating seeds of Faba *major* and Triglochin *palustrae;* of the latter, in those of Mirabilis *Jalappa*, Avicennia *nitida*, Stapelia, and Hordeum *zeocritan*.

In noticing the structure of the *pericarp*, Mr. Keith reduces it under all its various modifications to epidermis, membrane, pulp, and fibre; while the flower stalk and flower, the leaf stalk and leaf, are said to consist only of epidermis, parenchyma or pulp, and fibre. He regards the organs of the flower as prolongations of component parts of the flower stalk, although the whole of these are not contained in one organ: thus the epidermis and parenchyma are common to all of them; but the fibres are found only in the calyx or the corolla, forming a net work, the meshes of which are filled up with parenchyma. They are, nevertheless, afterwards described as being found in the ovary, also, as it advances to maturity; and occasionally in the filaments and pistil. No mention is made by Mr. Keith of vessels in these parts, the existence of which is fully proved by M. Mirbel. Our two authors differ extremely in their description of the structure of the leaf. Mr. Keith regards the nerves and veins as bundles of simple fibres, which, in the plate of the leaf, form a double or triple net-work, the meshes of which are filled by parenchyma; and in order to inspect these, he advises the leaf to be examined in its state of decay, or as reduced to a skeleton of fibres. Now, although in this state we are willing to admit that the whole appears as a net-work of fibres, yet in the recent leaf the vascularity of these may be easily demonstrated. The following is M. Mirbel's description:

> "The plate of the leaf is formed by the dilation and extension of the cellular tissue, and the separation and ramification of the vascular bundles. The bundles, which at first consist only of one or more principal trunks, divide into numberless ramifications like a net-work, the meshes of which are filled up with the cellular tissue." —p. 149.

The truth of this description is easily verified by the microscope, and is evident even to the naked eye in those leaves in which spiral vessels are found; as, for example, in those of Cornus *mascula*.

Mr. Keith's section upon the Structure of *Gems*, considered as decomposite organs, is divided into four sub-sections. The first treats of the *Bud;* the scales or external parts of which he describes as consisting of the same parts as the leaves, with the exception of longitudinal fibres. In the description of the internal parts, as far as they are composed of the rudiments of leaves and branches, both authors follow the modes and terms of foliation pointed out by Linnæus. The description of the flower buds, and those which contain both flowers and leaves, is extremely accurate and satisfactory. Mr. Keith describes a bud of the horse-chesnut, which he examined in March 1810, before it had burst its scales, which amounted to fifteen in number, and covered one pair of opposite leaves, the divisions of which were matted together with a fine down.

> "The leaves, upon being opened, were also found to contain within them a flower-spike, consisting of not less than a hundred florets closely crowded together, each enveloped by its downy calyx, which, when opened, discovered the corolla, stamens, and pistil, distinct; the rudiments of the future fruit being also discernible in the ovary."—p. 280.

The sub-section on bulbs contains nothing particular. Mr. Keith follows Gærtner in his description of the *Propago* and the *Gongylus*, neither of which are noticed by M. Mirbel. The first is attached to Lichens, and is a small, pulpy, irregular granule, sometimes naked, and sometimes covered with epidermis: the second, which is found chiefly in the Fuci, is a small, firm, globular granule, resembling indurated pulp, invested with an epidermis.

Mr. Keith, in his description of the structure of stems, instead of arranging them according as their internal appearances approach to those of one or other of the two grand divisions of plants, the *Monocotyledons* and *Dicotyledons*, the method adopted by M. Mirbel, divides them, with more propriety, according as their structure can be regarded as *homogeneous* or *heterogeneous*.

The first is exemplified in the algæ and fungi, the stems of which are simple "homogeneous masses of pulp, or slender fibre, enclosed in an epidermis:" the second he describes as consisting of an epidermis, inclosing "a caudex that consists of two or more substances, or assemblages of substances, totally heterogeneous in their character;" as exemplified in annuals and herbaceous plants, the caudex of which consists of pulp and interspersed fibre; and is either, with regard to the pulp, solid, as in ferns, palms, and other monocotyledons; or tubular, as in hemlock, and the gramina: another variety of the heterogeneous stem is that which consists of *bark*, *wood*, and *pith*. This exhibits the most general mode of distribution of the parts of the caudex, as exemplified in trees and shrubs, and likewise in many plants which are altogether herbaceous, as the cabbage and the burdock: but in the former case the wood is perfect, whilst in the latter it is imperfect. The bark in this class of stems is composed of three distinct parts—*epidermis*, *parenchyma*, and *liber*: the wood of two—a harder, which is internal, and regarded as fully *formed wood*, and a softer and external, which is named *alburnum;* the structure of each of which, with that of the pith, is examined by Mr. Keith in the second chapter of this Book, under the title of COMPOSITE ORGANS.

These organs, as enumerated by Mr. Keith, are epidermis, pulp, pith, cortical layers, and vegetable fibres; each of which are separately examined in their successive order.

In describing the structure of the *Epidermis*, Mr. Keith and M. Mirbel agree as to its external character; but Mr. Keith notices that of Crocus *vernus* as an exception to the general opinion that the epidermis is in itself colourless, transmitting merely the colour of the parts it covers; the colour of the epidermis covering the lower part of the petals of that flower being inherent. As to the structure of the organ, after stating the opinions of Du Hamel, the elder Saussure, Hedwig, Comparetti, and Mr. Francis Bauer, he accords generally with that of Hedwig, who regards it as being composed of two distinct reticular webs, forming a pellicle, with peculiar areas interspersed, perforated with pores, which are organs of perspiration: but he at the same time observes, that

> "the structure of the epidermis is found to be characterized by the same sort of variety of modification, as the structure of the other parts of the plant."—p. 310.

One variety he points out in the inside of the petals of Crocus *vernus*, in which it seems to consist of

> "a thin and individual layer of parallel and tangent reeds of unequal lengths, interspersed with multitudes of minute and shining points, and resembling the front view of the false pipes of an organ." —*p. 310.*

Mirbel's idea of the structure of the epidermis is altogether different. He regards it as a simple condensation of the cellular tissue; and the variety it presents as arising from the varied forms assumed by the compressed cells, and the glands and hairs which cover it.

> "Tantôt se sont des parallélogrammes plus ou moins réguliers, tantôt des hexagones, tantôt des polygones divers, dont les côtés sont ondulés."—p. 36.

He admits the existence of the areas, but not the pores, mentioned by Hedwig; the appearance of which he considers an optical illusion. Although, we confess, our own observations incline us to agree with Mirbel as to the general structure of the epidermis, yet we conceive the very functions of the cuticle, as a perspiratory organ, is a strong proof of the existence of these perforations. We also believe, with Mr. Keith, that "the ultimate and unorganized pellicle of Saussure remains undetected, and that its existence is very doubtful."

The pulp of Mr. Keith is the cellular tissue of Mirbel; and Mr. Keith candidly admits that the description of this author "is the most accurate and the most generally applicable." He regards it as composed of hexagonal, or, if compressed, of elongated cells, the partitions of which are common to adjoining cells, thin, extremely delicate, perfectly transparent, and generally perforated with pores less than the three hundredth part of a millimetre in diameter; and sometimes, although not always, bordered with a minute glandular ring. In some instances, however, as in the medulla of *Nelumbo*, instead of pores, there are transverse slits, which are occasionally so numerous, "que les cellules," says M. Mirbel, "y sont transformées en un vrai tissu reticulaire." In admitting the accuracy of this description, Mr. Keith blames Mirbel for a useless distinction of this tissue into herbaceous tissue and Parenchyma, according as it contains a resinous and coloured, or a watery and colourless juice, not aware that that distinction is dropped in the work before us: but he himself proposes to term it *Cellular Membrane* or *Tissue* when the cells are empty, and *Parenchyma* when they are filled with juice, whatever that may be; and having adopted these distinctions, we are surprised that he describes the *Pith* as a distinct structure. This objection he indeed appears himself to have felt; and observes, in answer—

> "but the texture of the membrane composing the cells of the pith, seems to be besides essentially different from that of the membrane composing the cells of the pulp; the former being evidently of a much more elastic nature than the latter, as well as much more capable of resisting the action of water, when emptied of the parenchyma."—p. 324.

The futility of this answer, however, is evident, when we examine the cellular structure of dried succulent leaves, and some fruits, that exhale the watery part of their juices, without passing into decomposition. In these we perceive the cellular membrane equalling in elasticity that of the pith.

The next of the Composite Organs, the *Cortical Layers*, are described by Mr. Keith as being composed of "two elementary parts—bundles of longitudinal fibres, constituting a net-work—and a mass of pulp, more or less indurated, filling up the meshes." M. Mirbel describes them as composed of numerous net-works of elongated cells, placed one above the other. The difference is more in terms than in fact. As an anomaly of this structure, Mr. Keith mentions the bark of the fir-tree, the liber of which is merely "a thick layer of parallel and contiguous threads," or united vessels, cemented together by "a glutenous parenchyma."

The *Ligneous Layers* are divided by Mr. Keith into concentric and divergent. He refutes the idea that the number of the former marks the age of the tree. The latter are the medullary rays of Ray and other botanists, and the appellation is retained by M. Mirbel, although he accords with Mr. Keith in regarding them as unconnected with the medulla. Both authors also agree as to the structure of these layers; the concentric being composed of longitudinal fibres, and the divergent of cellular tissue. For the sake of students, we may mention that the former are well exhibited in the full-grown roots of the Archichoke, when macerated, or long exposed to the action of the weather, so as to decompose the divergent layers; while the structure of these may be readily observed by placing a thin slice of the recent root under the microscope.

The last of the Composite Organs, the *Vegetable Fibre*, is described by Mr. Keith as presenting, when viewed under a good glass, an appearance "of a succession of rings," soft and gelatinous in the alburnum; but in the formed woody parts, solid, cohesive, and generally transparent, "particularly at their points of inosculation;" as may be seen both in the cortical layers, the concentric layers of the wood, and the longitudinal layers of the roots and stems of the Monocotyledons.

The ultimate fabric of the vegetable body, we are informed by Mr. Keith, is a fine, colourless, transparent membrane, in which no traces of organization can be discovered; and as composed of this, the elementary organs are "fibre, cellular tissue, with or without parenchyma and reticulated membrane." The consideration of these forms the subject of the third chapter of this book of the System. In noticing the structure of the longitudinal fibres, Mr. Keith puts the following questions: "are they tubular, or are they solid? and, if tubular, are they all of the same species?" We confess we do not exactly comprehend the import of these queries. If they mean to inquire whether all the longitudinal fibres in the vegetable structure be tubular, it would not be difficult to prove the existence of solid fibres; but if the questions refer merely to the fact of the existence of a vegetable vascular system, we are ready to give our assent to the proofs brought forward by both our authors in support of the affirmative. While we admit this much, however, we cannot avoid suspecting that Mr. Keith must have laboured under an optical illusion, in imagining that he perceived the motion of the fluids in the vessels, as described in the following passage, which he seems to regard as an *observatio non refellenda* in support of his position.

> " Having taken the peduncle of a male flower of *Marchantia polymorpha* and pulled it gently in two, I found that the central and longitudinal fibre had not been fractured at the point, where the rest of the peduncle was fractured, but at the distance of about an inch. The consequence was, that it was drawn out of the surrounding substance as out of a sheath, and laid bare to the above extent. It was perfectly colourless and transparent, and what appeared to the naked eye to be but one fibre, was found under the microscope to be composed of a number of smaller fibres amounting at least to twelve, perhaps twenty, and closely adhering together by the whole of their length. In these I could plainly perceive the existence of a fluid, which was in some ascending and in others descending with a quick but interrupted motion, like that of the mercury in a tube that has not been well cleaned, or of the air in a spirit of wine level. From this I think the tubular structure of the longitudinal fibres, together with their capacity of conducting fluids, is clearly demonstrated; as well as from the visibility of their aperture on the transverse section." —p. 344.

As there are sufficient evidences, however, of the existence of vegetable vessels, without the demonstration just detailed, we will pass on to the examination of the various kinds, as described by both our authors.

The first set of vessels noticed by Mr. Keith, are the *Utricles*, which constitute in fact the parenchyma, as described by himself, or the cellular tissue of Mirbel, which we have already noticed. The second are the Tubes; and in describing these, Mr. Keith has done little more than translate M. Mirbel's account of them in his *Traité d'Anatomie*; but this author has altered his arrangement of the vessels in the *Elemens*. The first of the varieties, *Simple Tubes*, noticed by Mr. Keith, is the sixth of Mirbel, in the work before us, and is there named *Vaisseaux propres*, from their containing the proper juices of the plant. They are entire tubes, free from pores or other openings; and are found in the bark, medulla, leaves, and corollas. Mirbel observes that they are found both solitary and in bundles. The second variety, *Porous Tubes*, are named from their structure, and exist in every part of the vegetable in which the sap moves with freedom.' In addition to his former account, copied by Mr. Keith, Mirbel observes,

> " Il ne faut pas se les representer comme des tubes continus, depuis la bas du végétal jusqu'à son sommet ; ils se joignent, se séparent, se rejoignent, disparaissent quelquefois, et se changent toujours en tissu cellulaire vers leurs extrémités."—p. 32,

The third variety of the System, ***The Spiral Tubes***, the fourth of the Elemens, " *Les Trachees*," are the vegetable vessels which were first observed, and, perhaps, may still be regarded as the only variety which admits of a positive demonstration. The description of these is very satisfactory in both authors. For the sake of the student, we may observe that they are best seen in the leaves and leaf stalks of any of the species of Cornus, or of Euonymus. Mirbel remarks they are " si abondantes dans le Bananier, qu'on a proposé de les extraire pour à fabriquer des étoffes."—p. 33. The fourth variety, the third of Mirbel, is the ***False Spiral Tubes***, which Mr. Keith, with much probability, suggests are " perhaps formed of the true spiral tubes, by means of a partial union of the spires." Mirbel considers these and the spiral tubes as the principal vessels for conveying the sap, an opinion we shall afterwards have occasion to examine. The fifth variety, " ***Mixed Tubes***," as their name imparts, are vessels combining in the same length " two or more of the foregoing varieties;" which Mirbel regards as a proof that the four preceding species are merely modifications of each other. The *Small Tubes* of Mr. Keith, and of the *Traité d'Anatomie* of Mirbel, are now noticed by the latter, author, in the *Elemens*, as a variety merely under the appellation *Vaisseaux en Chapelet ;* and consist of a succession of elongated cells, separated by transverse forms or cribriform diaphragms. Mirbel observes that they serve for connecting the large vessels of the stem with those of the branches ; and it is through them that the sap passes from the one to the other.

Mr. Keith next enters upon the consideration of *Apertures* as elementary organs. These may be reduced to *pores*, which are perceptible and imperceptible, and *gaps*. Perceptible pores are found on the epidermis, and in some of the vessels and cells, serving in the former for the emission of perspiration, and in the latter for the lateral transmission of the sap ; whilst the existence of imperceptible pores is inferred only from observing that pulpy fruits, in the epidermis of which no pores can be traced but by glasses, both transpire and absorb moisture ; although they are so minute, that, in " an apple, or other pulpy fruit, placed under the receiver of an air pump, and the receiver exhausted, the air contained in the apple escapes only by the bursting of the epidermis." *Gaps*, although sometimes found symmetrically arranged, yet can scarcely be considered as more than accidental disruptions of the cellular tissue. This chapter concludes with a description of *Internal Glands* and *Internal Pubescence*, as appendages of the elementary organs; but of the real existence of these the authority of neither Mr. Keith nor M. Mirbel has been yet able to convince us.

The third book of Mr. Keith's arrangement, which treats *Of the Primary Principles of Vegetables*, may be regarded rather as Chemical than Botanical. It is divided into two parts; the first of which treats of Vegetable Analysis, embracing both mechanical and chemical processes; and the second, of the Products of Vegetable Analysis, whether compound or simple: both are perspicuously drawn up; but the details, although sufficient for the nature of the work, are too general to be satisfactory to those who are desirous of attaining an accurate knowledge of vegetable chemistry. We need do little more than enumerate the products noticed by Mr. Keith. They are—*Gum*, comprehending gum arabic, gum tragacanth, cherry-tree gum, and mucilage; *Sugar*; *Starch*, under which are included salop, cassava, &c.; *Gluten*; *Albumen*, the account of which is sufficiently full, except that in noticing that of the Hibiscus *esculentus*, its peculiar property of being again soluble in water after it has been coagulated, distinguishing it from all other vegetable albumen, is overlooked; *Fibrina*; *Extract*, comprehending that of catechu, senna, quinquina, and saffron; *Colouring Matter*, under which Mr. Keith classes, as fundamental colours in dying, blue, red, yellow, and brown, enumerating the plants which yield each, and the modes of preparing them; *Tannin*; the *Bitter Principle*, the existence of which as a distinct vegetable product we very much doubt; the *Narcotic Principle*, under which name Mr. Keith describes the white crystallizable salt discovered in opium by Desrone; but which, notwithstanding his assertion, cannot certainly be regarded as the narcotic principle: *Acids*, comprehending the oxalic, the acetic, the citric, the malic, the gallic, the tartaric, the benzoic, and prussic; but the mellitic, the kinic, the moric, the fungic, and the succinic, are not noticed: *Oils*, fixed and volatile, with their varieties; *Wax*, with its modifications, vegetable butters; *Resins*, as constituting resin, mastich, sandarach, elemi, tacambac, labdanum, opobalsamum, copaiva, dragon's blood, guaiac, which we must remark is improperly classed as a resin, being a distinct principle; green resin, copal, animé, lac, and bloom: *Gum-Resins*, as galbanum, ammoniac, scammony, opoponax, euphorbium, olibanum, sagapanum, gamboge, myrrh, and assafœtida; *Balsams*, the principal of which are benzoin, storax, Tolu, and balsam of Peru; *Camphor*; *Caoutchouc*; *Cork*; *Woody Fibre*, in noticing which Mr. Keith, unwilling to give up the idea of all the fibrous part of the plant being hollow tubes, observes, that it may be doubted

> "whether there exists in the plant any individual substance different from those already described, and constituting more immediately the fabric of the wood."—p. 452.

Charcoal; the *Sap*; the *Proper Juice*;—under which head the analyses of that of Euphorbia *cyparissias*, by Sennebier and Chaptal, are given. We take this opportunity of observing, that we have detected prussic acid in the juice of several species of Euphorbia. *Ashes*; *Alkalies*; *Earths*; as lime, silica, magnesia, and alumina. *Lime* is said to be found generally in combination with acids, forming phosphates, carbonates, and sulphates; we have found oxalate of lime in large quantity in the root of rhubarb as imported into this country. *Metallic Oxides*, as those of iron and of magnanese. All these, a few simple elements, and the more essential compound substances, however various in their physical properties, are reducible, Mr. Keith informs us, to *carbon*, *oxygen*, and *hydrogen*: perhaps it would have been more correct to have said, the organic or unequivocal vegetable products; for it is difficult to determine which part of the vegetable components, however small in quantity or apparently useless in the œconomy of the plant, can be termed unessential.

A dissertation on the Chemical Properties of the Vegetable Products is also given by M. Mirbel; and, in a Supplement to the first part of his work, under the title *de la Composition Chimique des Végétaux*, an extract from a work of M. Chevreul, on the immediate principles of plants. It would be unnecessary to add any thing in commendation of the manner in which this is drawn up. The following passage is a specimen, as far as a translation can be regarded as such:

> "*Genus of Gums* (genre des Gommes). This genus contains substances which are chrystallizable, insoluble in alcohol, form a mucilage with water, afford sacholactic acid when treated with nitric acid, and are not susceptible of the alcoholic fermentation.
>
> "First Species. *Gum Arabic.*—Very soluble in water, and
>
> Composed of...... Carbon..........42,23 ⎫ Oxygen.........50,84 ⎬ G. Lussac and Thenard.
> Hydrogen ..... 6,93 ⎭
>
> "Second Species. *Gum Tragacanth.*—Forms a very thick mucilage with water; but is scarcely, if at all, dissolved in that fluid; when distilled, it yields charcoal and more sacholactic acid than gum arabic.
>
> "It is probable that the gums in the state in which we procure them, are not pure principles, as they have no very striking specific properties; and if they were not characterized as a genus by the

peculiarity of being changed into sacholactic acid, their existence, as peculiar proximate principles, would be very doubtful."

The *Sugars* form the only other genus, which he regards as established by precise characters; and he conceives, that it would be more natural to distribute the fatty products in a series than in genera.

Having finished the analysis of the vegetable structure, Mr. Keith, in the fourth book of his arrangement, enters upon the consideration "*Of the Phenomena of Vegetable Life;*" and traces the effects of the vital principle from the first symptoms of its agency in the evolution of the seed, until "its ultimate and complete extinction, as denoted by the death of the plant."

The first chapter, on the *Germination of the Seed*, embraces three subjects of inquiry: 1. The conditions necessary to germination; 2. The physical phenomena; and 3. The chemical phenomena attendant on that process.

The first condition is the maturity of the seed; which, however, does not imply its separation from the seed vessel, as occasional germination is effected in the pod, or the fruit, of which the lemon is not an unusual example. The second is the exclusion of light; regarding the necessity of which, both authors agree. Mr. Keith, however, merely states the fact, which M. Mirbel accounts for by observing, that as light effects the decomposition of carbonic acid gas, abstracting the oxygen and fixing the carbon, it retards germination, inasmuch as the embryo,

> "instead of retaining carbon, and assimilating it into its own substance, requires it to be thrown off, which is affected only by the carbon combining with oxygen gas and forming carbonic acid gas."—p. 77.

The other conditions necessary for germination are the action of heat, the access of moisture, and the access of atmospheric air; the operation of which is well explained by both authors; but justice obliges us to confess, that the explanations of M. Mirbel are both more scientific and more satisfactory.

With regard to the physical phenomena attending germination, phytologists are pretty well agreed. The following is the manner in which the process proceeds: when a seed is put into the ground, moisture is absorbed through its coats, particularly at the scar and foramen, and entering the cotyledons or perisperm; the whole swells; and the radicle elongating, bursts its envelopes, and dips into the soil; whilst the plume also enlarging, rises and shoots up into the stem and herbaceous part of the plant. Regarding the causes of the constant descent of the root, and the ascent of the stem, whatever may be the position of the seed, authors are still at variance. Mirbel does not venture any opinion of his own, but shortly notices those of Duhamel, John Hunter, and Mr. Knight; which, with the addition of that of Darwin, are also noticed by Mr. Keith, and proved to be inadequate to the explanation of the phenomenon. His own opinion is, that the invincible tendency of the radicle to descend, and the plume to ascend,

> " arises from a power in the vegetable subject, analogous to what we call instinct in the animal subject; infallibly directing it to the situation best suited to the acquisition of nutriment and consequent developement of its parts."—p. 27.

We confess that we are much disposed to adopt this explanation; and have always been surprised, that the authors of the various hypotheses which have been advanced, seem in their reasonings entirely to have forgotten, that plants are endowed with vitality; and that the evolution and direction of their parts must be regulated by the same laws which regulate those which depend on the simple vital functions in other living bodies, when not irresistably opposed by external obstacles.

Both authors accord in their account of the chemical phenomena attending germination; and both admit, that the oxygen of the atmosphere is the principal agent in effecting the change of the fecula of the cotyledons and perisperm into the saccharine emulsion, which supports the evolving embryo. Both adopt also the opinion suggested by Saussure, that this change is owing to the diminution of the carbon of the seed; and concur in supposing, that the oxygen enters into the substance of the seed, and is there changed into carbonic acid gas, which is again exhaled. That this is not the fact, however, has been clearly proved by Mr. Ellis*, who has demonstrated, that carbon only is exhaled by the germinating seed, and unites at the moment of its emission with the oxygen of the surrounding atmosphere, forming carbonic acid gas; the quantity of which is found to be always equal to the quantity of oxygen which has disappeared, and consequently to the carbon emitted. We may refer our readers to another explanation of the chemical phenomena of germination, suggested by Kirchoff, already noticed in the *Repository*†. Mr. Keith endeavours to explain the cause of seeds not making the same progress, after the first evolution of the parts, when made to germinate in pure oxygen gas, by supposing that the pure gas either abstracts too much carbon from the seed, or the "carbonic gas, evolved in too great abundance, may be prejudicial to the developement of the infant plant." The last is the more probable opinion; but a better explanation is that of M. Mirbel, who justly attributes it to the over-excitement of the embryo; by the pure oxygen, "et la vie," he adds, "serait anéantie par la surabondance du gas qui l'entretient."

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* *Changes induced on Atmospheric Air by the Germination of Seeds, &c.* 8vo. Edinburgh, 1811, passim.

† *Repository*, vol. vi. p. 168.

In the second chapter of this book, Mr. Keith enters upon the important inquiry of ascertaining "*the food of the vegetable plant*;" a part of his subject which naturally embraces the consideration of the nature both of the atmosphere and of soils; and hence, for the sake of arrangement, he considers "it under the six following heads: "water, gases, vegetable extracts, salts, earths, manures." The consideration of the same subject forms part of the fifth section of the first part of *Les Elemens*, under the title "*de la Composition Chimique du Végétal et de sa Nutrition.*"

Both authors give a summary of the opinions of Van Helmont, Boyle, Bonnet, and other philosophers of the seventeenth century, who supposed that *water* was the sole food of the plants; and also of the subsequent experiments of Woodward, Hassenfratz, and Saussure, by which these opinions were refuted.

That atmospheric air, as well as water, is requisite for supporting the life of the vegetating plant, is undoubted; but it is part only of this medium which is "adapted to purposes of vegetable nutrition;" and therefore Mr. Keith next directs his attention to the gases, as the food of plants. With regard to *carbonic acid gas*, he relates the experiments of Drs. Priestley, Percival, and M. Saussure; and concludes from those of the latter, that an increased proportion of this gas in atmospheric air, within a given degree, forwards vegetation in the sun; although in a greater proportion than exists in atmospheric air, it is hurtful to plants in the shade. He also adopts the conclusions of Saussure, drawn from experiments, "that carbonic acid gas, as applied to the roots of plants, is beneficial to their growth, at least in the more advanced stages of vegetation:" and the same opinions are admitted by Mirbel. Oxygen is also regarded by Mr. Keith as necessary as an aliment for the support of the vegetating plant; an opinion, however, which in our view of the subject requires further confirmation. In stating that *nitrogen* gas is incapable of affording a vegetable aliment, although nitrogen is a component of wood, extract, and the green parts of plants, Mr. Keith inquires,—Whence then is their nitrogen derived? and answers the query by asserting, that its source is the "extractive principle of vegetable mould;" but M. Mirbel conceives, that it is also taken up with the water and animal matters in solution. *Hydrogen gas* in the same manner is not taken in as food by plants; but it is nevertheless a vegetable aliment, and obtained from the decomposition of water in the body of the plant. Saussure found, that *carbonic* oxide could not be regarded as favourable to vegetation. The experiments of Saussure, to prove that *extract* is a component of vegetable mould, soluble in water, and is thus taken up by the roots of plants, are noticed; and Mr. Keith states it as his opinion, that it is from this source the vegetable obtains its nitrogen. *Salts* are also regarded as the food of plants; but it is probable that they are in a great measure merely excitants of the vegetable irritability; and it is difficult to deny that some of the salts found in the ashes of plants are not the products of the combustion. The experiments of Lampadius, Woodward, and Giobert relative to the *earths*, as a part of the aliment of plants, are next related. Although we admit with Mr. Keith, that the opinion of the first of these phytologists, that "the earths contained in plants are merely the effect of vegetation," and not taken up from the soil, is extravagant; yet we must contend, that none of the theories which have been adopted explain satisfactorily the origin of the large quantity of earths found in some plants; for example, in the epidermis of *Equisetum*, and the joints of the Bamboo. It is, nevertheless, more consonant to our ordinary ideas to suppose, that they are absorbed with the water which is taken into the plant, both by the roots and the surfaces of the leaves. The consideration of the earths naturally introduces that of *manures*, the nature and action of which, are briefly but very satisfactorily explained by Mr. Keith. As to the question, whether plants derive their carbon from the watery solution of the carbonaceous part of decomposing manures, or from carbonic acid gas, either in combination with some other substance, or simply held in solution in the water taken up by the roots? both our authors conceive the latter to be the more probable source of that principle. But manures answer another important object, which Mr. Keith appears to have altogether overlooked, the excitement of the vegetable irritability; and M. Mirbel has merely slightly glanced at it in concluding his remarks on the *Elementary Principles* of Vegetables; "et probablement," he observes, "ils (les engrais) excitent l'irritabilité des organes, et augmentent par ce moyen la succion et la nutrition."

Having finished his remarks on the substances constituting the food of plants, Mr. Keith next examines the *Process of Nutrition*, which involves several interesting topics, each of which we shall separately notice in the order of his arrangement. The first relates to the means by which the food, whether lodged in the soil or wafted through the atmosphere, is taken up by the plant. There can be no doubt that this is effected by means of the organic pores of the epidermis; and in the opinion, that this absorption of fluids is carried on by the epidermis both of the roots and of the leaves, both authors agree; but, although the fact that leaves can absorb must be admitted, yet, as they are naturally exhaling organs, we have our doubts whether thin leaves ever absorb in the healthy state of a vegetating plant, when its roots are sufficiently supplied with moisture. It can scarcely be supposed, that the pores of leaves absorb and exhale at the same moment; and if we were to admit the existence of different pores for these distinct functions, the utility of the absorption of atmospherical moisture at the instant that the superabundance of that taken up by the roots is passing off, does not appear very evident. The opinion of the inhalation of gases, in their aërial form, by the epidermis of the leaves, which is also maintained by Mr. Keith, is yet more exceptionable.

The nutriment being taken in by the pores of the root, it must be carried through the plant; thence the next object of inquiry brought forward by Mr. Keith, is, very properly, "*the Descent of the Sap.*" The common facts are stated in proof of the motion of the sap, of this being continued to a certain degree even in winter, and of the velocity and force with which it rises in spring, as proved by the experiments of Hales; and the question is then proposed, whether it rises through any particular channel? This subject is very fully investigated; the experiments of Malphigi, Grew, du Hamel, De la Baise, Bonnet, Mirbel, and Mr. Knight, being detailed, and the conclusions of the two latter adopted. By those of Mr. Knight, he conceives, that the fact of the sap being conveyed through the tubes of the wood and albumen until it reaches the leaf, is clearly proved. As Mr. Knight, however, merely named these common tubes, without particularizing them, Mr. Keith states, on the authority of Mirbel, that it is through the *small tubes*, which, as we have already explained, are his vaisseaux en chapelet, that the sap ascends to the leaf. In the work before us, however, M. Mirbel expressly states, that "la sève monte par les gros vaisseaux," referring to the wood and alburnum; and implying porous vessels, annular vessels or fausses trachées, and mixed vessels; whilst he says, that the small vessels or those en chapelet "servent d'intermédiares entre les gros vaisseaux des tiges et des branches," and by their means the sap passes from the one to the other. Mr. Knight, tracing the sap into the leaves, flowers, and fruit, asserts, that it passes in these through the central vessels, which Mr. Keith again regards as M. Mirbel's small tubes; but this author, in the *Elemens*, remarks that the vessels of these organs consist of "trachées, de fausses trachées et de vaisseaux poreux;" never once mentioning the small vessels, or those "en chapelet," in describing the structure of either the leaves, or the flower, or the fruit. Mr. Keith, however, afterwards concludes, from the experiments of Hedwig, that the "spiral vessels, where they exist, do also conduct sap." These differences of opinion are undoubtedly bewildering to the young Botanist; and after all that has been written, it must be confessed that, although it has been fully demonstrated that the sap rises through the younger wood and alburnum; and from the appearances presented in a longitudinal section of branches, when coloured fluids are absorbed by the extremities, when in a vegetating state, it is nearly certain that its channel is the vascular tissue; yet it is by no means clear which of the varieties of vessels described by Mirbel convey it. Indeed, if we were requested to say whether all these varieties of vessels have been unequivocally demonstrated, we are obliged, in candour, to admit, that our microscopical observations have never enabled us to discover more than the simple, entire, and porous vessels; the spiral vessels, which are even evident to the naked eye; the mixed vessels, composed apparently of successive lengths of the two former; and M. Mirbel's "vaisseaux en chapelet."

The hypotheses on the *Causes of the Ascent of the Sap* have not been less diversified than those as to the channels of its distribution. It was at different periods ascribed to its own volatility, to magnetic influence, to fermentation, capillary attraction, the contraction and dilatation of the air vessels, the condensation and rarefaction of the air and juices of the plant, the agency of heat, and lastly, to that of the silver grains, or medullary rays; the plates of which, as they readily contract and dilate, when planks are acted on by moisture and heat, Mr. Knight conceived must necessarily be active agents, also, during the life of the plant. But in all these hypotheses, the vitality of the plant was overlooked; and it was not until Saussure took into account this principle, that any suggestion appeared "at all adequate to the production of the effect." If the irritability of the vegetable vessels be admitted, of which there is abundant proof, there is no difficulty in conceiving how the sap can be elevated to the summits of the tallest trees; and this opinion, the most rational that has been suggested, is adopted by both our authors.

> "Il a donc fallu," observes Mirbel, "avoir recours à la *force vitale*, qui est pour le Naturaliste, ce qu'est *l'attraction* pour le Physicien: *un effet général au quel on rapporte comme à une cause première, tous les phénomènes particuliers qui concourent à le produire.*"—p. 208.

Mr. Keith next endeavours to explain *the Elaboration of the Sap.* This fluid is either changed in the root; in passing "through the glands of the cellular tissue," or, which is a more probable opinion, it dissolves and carries up with it matters deposited during the preceding autumn: but the elaboration of the sap is chiefly effected in the leaf, in which the watery part is thrown off by insensible perspiration; and those changes take place, which convert it into gum, fecula, resin, and the other proper juices of the plant. Mr. Keith details Hale's experiments in proof of the imperceptible perspiration of plants; but we cannot accord with his opinion that the exuded secretions found on the leaves and stems of plants, can in any point of view be regarded as the effect of superabundant sap, even in the highest state of elaboration.

In noticing the experiments of Priestley, Saussure, and Senebier, on *the Elaboration of Carbonic Acid*, Mr. Keith observes that, by this decomposition, which occurs only in the light of the sun, not merely the carbon, but part of the oxygen it contained, is assimilated. In the next section, on *the Elaboration of Oxygen*, he also assumes, as an indubitable fact, the opinion of Saussure, that Oxygen gas is inhaled by the surfaces of plants; and, whilst part combines with carbon in their parenchyma, forming the carbonic acid gas which is exhaled in the shade, the remainder is assimilated. Now we believe that neither positions are fully ascertained; and, with regard to the latter in particular, we have little hesitation in stating, that the carbonic acid found in a receiver, in which a vegetating plant has been confined in the shade, or during the night, is the result of the carbon given out by the plant, combining with the oxygen of the atmospheric air contained in the receiver, in the same manner, as if an animal were confined under similar circumstances. The oxygen produced by the leaves of a plant, on the contrary, which is exposed to the direct rays of the sun, results partly from the decomposition of the carbonic acid taken up with the fluids absorbed by the roots, and partly from the decomposition of the other; whilst the hydrogen and carbon thus set free, combines and are assimilated into the succus proprius of the plant, to form its secreted juices, and add to its solid vegetable substance. But in treating of *the decomposition of water* by plants, Mr. Keith denies that plants

> "in any case decompose water directly; that is, by appropriating its hydrogen, and at the same time disengaging its oxygen in the form of gas, which is extricated only by the decomposition of carbonic acid."—p. 181.

He even supposes that plants vegetating in nitrogen gas for several days and nights, extricate oxygen by first forming of their own substance a supply of carbonic acid gas, which they afterwards decompose.

The section on the *Descent of the Proper Juice* is very satisfactory; and we believe that, since the experiments of Mr. Knight on this subject, no phytologist doubts that the bark is the channel by which those juices descend, by means of which the increase of the various parts of the vegetable individual is effected. With regard to the *causes of the descent,* there can be little doubt that these are the same as those which produce the ascent of the sap; viz. the contraction of the vessels so as to propel forward their contents, produced by the action of these contents on the irritability of the coats of the vessels. This opinion is ably supported by Mr. Keith against the hypothesis of Mr. Knight, who ascribes it to the joint action of "gravitation, capillary attraction, the waving motion of the tree, and the structure of the vessels." Many of the facts are in direct opposition to the first of these causes, particularly the course of the proper juice in pendant branches; the second is scarcely insisted on by its author; the third is suggested on observations that admit of a different explanation; and the last is inadequate to the effect, unless the irritability of the vessels be admitted.

In the fourth chapter, the PROCESS OF VEGETABLE DEVELOPEMENT is investigated. This operation of the vegetable œconomy "is not exactly the same in herbaceous and annual plants as in woody and perennial plants;" but as the growth of the first year of the latter exemplifies the growth of annuals, and that of succeeding years whatever is peculiar to perennials, Mr. Keith confines his inquiries to them. Mirbel supposes the whole of the vegetable *elementary organs* to be composed from the proper juice converted into a membranous tissue, the foldings and doublings of which form the hexagonal cells of the cellular tissue; and from this the tubes are generated, by the bursting of the vertical partitions of the cells. The difficulties with which this opinion is beset are very obvious; and are pointed out by Mr. Keith, who supposes

> "that the rudiments of all the different parts of the plant do already exist in the embryo, in such specific order of arrangement as shall best fit them for future developement, by the intro-susception of new and additional particles."—p. 203.

But although this opinion is more consonant to truth than that of Mirbel, yet, it is unnecessary to presuppose the existence of all the parts in the embryo, as the vital energy, which must be ultimately referred to for their formation even in the embryo, is fully equal to their future formation. The same may be said of the epidermis, which Mirbel imagines to be merely a pellicle of cellular tissue, hardened by the atmosphere; but which, as Mr. Keith has justly remarked, is "evidently an organ formed by the agency of the vital principle, even while the plant is yet in embryo." In the second section, the developement of the *Composite Organs* is very amply elucidated; but owing to the extent of the discussion, and its scarcely admitting of abridgement, we must refer our readers to Mr. Keith's work, for all the information they can desire on the subject. The third section discusses the question of the *Circulation of Juices*, which is not admitted by either of our authors. Indeed the simple progression of the fluids in the vegetable vessels, the sap being carried upwards in one set, and the proper juice, the result of the exposure of the sap in the leaf, being carried down by another, and deposited in the various parts of the stem and root, without again returning into the sap vessels, explains the phenomena of the vegetable system, without the supposition of a circulation of fluids.

Having examined the growth of the elementary and composite organs, the decomposite are next brought under view.—We can notice merely the more general results. The *root* elongates by the extremities only; but when it ceases to extend, either from accidents or naturally, it sends out lateral fibres, of which the premorse roots are striking examples. Mirbel supposes this alteration, in the spindle-shaped roots, to arise from the nutriment proper for them being exhausted; hence, says he—

> "nouvelles ramifications naissent immediatement au dessous de la superficie du terrain, et que celles qui sont plus avant dans la terre, et la partie inférieure du pivot, se detruisent."—p. 89.

With regard to the stem, although its length is owing to increase of the terminal shoot, yet the augmentation of the shoot is not at the extremity only, but by the introsusception of particles throughout its whole length. In thickness the increase is by annual layers, but this is the case in dicotyledonous woody stems only; the monocotyledonous, at least the greater part, not increasing except in altitude. M. du Petit Thouars has remarked, however, that the *Dracæna*, the *Aloe*, and *Yucca*, differ from the other palms, inasmuch as they increase in length, by the elongation of their central woody bundles, and in thickness by the developement of the bundles of the circumference, which sometimes coalesce and form a kind of ligneous layer. Thouars' observations are noticed by Mirbel, but not by Mr. Keith. The developement of the *branch* is the same as that of the trunk. Various but unsatisfactory opinions have been advanced regarding the developement of the *bud*, but in whatever manner this may be effected, Mr. Knight has demonstrated that it is nourished by the succus proprius. In its mode of augmentation, the *leaf* resembles the young shoot. The *flower* protruded in the spring, is formed in the preceding year. Linnæus suggested that the parts of the flower are prolongations of the pith, wood, and bark, an opinion in which Mr. Knight appears to coincide; but M. Mirbel justly remarks that its structure and functions are against the idea of its parts being prolongations of another set of organs, although it may have an immediate communication with them.

On *the Sexuality of Vegetables*, Mr. Keith has given a very interesting sketch of the origin and progress of this doctrine, which he states to have, in some measure, existed at least 400 years before the Christian æra; and is particularly maintained in the writings of Aristotle and Theophrastus, who, nevertheless, held very imperfect notions on the subject. Pliny, Dioscorides, and Galen, also admitted the distinction of sexes in plants; after whom an interval of many centuries occur before the doctrine was again brought forward by Cæsalpinus and Zeluzianski; but their opinions were very crude; and it was not until the Baconian philosophy began " to be adopted even in phytology, that Malphigi, Sir Thomas Millington, and Grew, gave the first glimpse of the real sexuality of plants." The opinion of these great men, which was first published by Grew, in his Anatomy of Plants, was adopted by Ray, proved by the experiments of Camerarius, Geoffrey, and Vaillant, and finally received its last degree of elucidation from the pen of Linnæus. The proofs of the doctrine, both as resulting from observation and from experiment, with the objections raised against it, and the refutations of these, are very fully stated by Mr. Keith; but as the sexuality of plants is no longer doubted, we shall pass on to the investigation of the nature of the process of fecundation, or *the impregnation of the seed.*

In admitting the sexuality of plants, the organs which distinguish the sexes are the stamen and the stigma; the former of which is the male, and the latter the female organ. The pollen of the stamen, or rather the fluid its globules contain, is also admitted to be the substance by which the seed is impregnated: but the following questions arise: " How is it conveyed to the ovary? What is the amount of its action?" The first step in the process of impregnation is the scattering of the pollen on the stigma; for the securing of which Nature has been abundantly provident. Both our authors enumerate several of these means; as, for example, the agency of the wind, and of winged insects, in those plants the sexual organs of which are contained in different flowers or on different plants; and even in monoclinous flowers, the anthers of which are not elevated on filaments, as Aristolochia *Clematitis.* In this class of flowers, also, the scattering of the pollen on the stigma is often secured by the pendant state of the flower, the corolla of which forms as it were a canopy over the sexual organs; and in some it is effected by the movement, either mechanical or spontaneous, of the filaments towards the pistil, so as to dash the pollen over the stigma. The first, or the mechanical movement, is beautifully illustrated in *Kalmia*, in which the anthers are held down in niches of the corolla until the pollen is ripe; when, by the increasing length and elasticity of the filaments, they are set free, and springing suddenly up, scatter the pollen over the stigma. The spontaneous movement of the stamens is admirably illustrated in Ruta *graveolens;* the stamens of which, although rigid, successively rise, so as to hang over the stigma, and return again to their places after the pollen is shed. But, how is the pollen conveyed to the ovary? This question would be extremely difficult to answer, were it necessary that the entire grains of pollen should pass; but it is the fluid only which these contain that is the fecundating principle; and both our authors accord, that this is absorbed and conveyed through the vessels of the styles. Mr. Keith notices some curious observations of Koelreuter, to ascertain the quantity of pollen requisite for producing the desired effect. In Hibiscus *Syriacus*, an individual flower of which Koelreuter found to contain 4863 globules of pollen, 50 or 60 are required to effect complete impregnation; whilst in Mirabilis *Jalappa*, the flower of which contains 300 globules only, two or three were sufficient.

With regard to the agency of the pollen, phytologists have widely differed, and have been classed, according to the opinions they maintain, into *ovarists*, *animalculists*, and *epigenesists:* they are briefly stated by Mr. Keith. The ovarists conceive that "the seeds pre-exist in the ovary before the access of the pollen, by which they are merely rendered fertile:" the animalculists, who have been thus improperly named, contend that the "pollen is a congeries of seminal plants, one of which, at least, must be conveyed to the ovum entire before it can become prolific;" and the opinion of the epigenesist is, that the embryo does not pre-exist in either the ovum or the pollen, but is generated by the union of the fecundating principles of the male and female organs, or the fluid of the pollen, and that exuding from the stigma when mature. The first and last of these theories have had the greater number of supporters. Mr. Keith is decidedly an ovarist. M. Mirbel has not so unequivocally declared his sentiments, although he appears to incline to the epigenesists; in favour of whom there are certainly some favourable evidences to be drawn from the productions of hybrids: but their arguments are nevertheless in our opinion unsatisfactory; and we feel more inclined to accord with the ovarists and Mr. Keith. The seed, like the egg, is perfected in the ovary; but it requires the agency of the fluid of the pollen to give it that vital principle on which the perfection of the embryo depends, and by which alone it is enabled to maintain a distinct existence when separated from the parent; and to develope itself in the act of germination when the necessary agents, heat, air, and moisture, are presented to it.

In the eighth chapter of this book, Mr. Keith treats *Of the Changes consequent upon Impregnation*, and illustrates them by some specific examples, by which the analogy between the developement of the animal and vegetable embryo is demonstrated to be extremely close.

The seed is at first a homogeneous glutinous mass, enveloped by two membranes; the outermost of which, although not capable of being detached from the mass of the nucleus before fecundation, readily separates in the maturity of the seed, and is then the *Testa*; the innermost, the rudiment of the *Subtesta*, is soft, pulpy, and vascular, being formed chiefly of a prolongation of the vessels of the umbilical cord, through which the juices pass by which the embryo is nourished. Within these is found the *Chorion*, the pulpy primitive nucleus of the seed, which gradually disappears, being the nutriment of the other parts: the *Amnios*, a clear, transparent, gelatinous fluid, the product of fecundation, which is ultimately either absorbed by the embryo, or converted into the albumen: the *Sacculus colliquamenti*, a thin, white, pellucid membrane, sometimes investing the amnios: and, lastly, the *Embryo*, which appears first where the umbilical vessels perforate the internal membrane, and the sacculus colliquamenti originates. In some seeds it is perceptible a few days after impregnation; in others, not until after several months.

> "Its figure is at first globular, its contexture pulpy, and its colour white. It swims in the liquor amnii, from which it derives its nourishment, seemingly unconnected with either the seed or the plant; but immersing itself deeper and deeper every day, and always in such a position as to turn the radicle towards the exterior of the seed, and the opposite extremity towards the centre; which extremity divides itself into lobes called cotyledons, through which the nourishment of the plantlet passes, or in which it is elaborated. At length the chorion is exhausted, and the amnios absorbed or converted into albumen, and the embryo, with its integuments, transformed into a perfect seed."—vol. ii. p. 37.

The account given by Mirbel of this process is still more minute, and several anomalies are pointed out, which Mr. Keith has overlooked: but his comparison of the growth of the fœtus to the formation of animal bone from the state of cartilage to that of solid bone, is in as bad taste as it is incorrect.

On the various methods employed by Nature for the *Propagation and Dissemination of the Species*, both our authors are extremely full, extending the investigation to seeds, and their dissemination by insects, birds, beasts, winds, rivers, the ocean, and the commerce of mankind; gems; runners; slips; layers; suckers; and grafts: whilst the causes limiting propagation, as soils, climate, and altitude, are also brought under consideration.

Mr. Keith's eleventh chapter, intitled *Evidence and Character of Vegetable Vitality*, is peculiarly interesting; and therefore, although we have already much exceeded the limits we had allotted for this analysis, yet we conceive our readers will justify us for examining it somewhat in detail.

Mr. Keith regards the capability of counteracting the laws of chemical affinity as the best criterion of the presence and agency of a vital principle. But, although vitality certainly counteracts those chemical affinities which tend to destroy organization, yet it is also true that it brings into action those the results of which are the secretions, and the assimilated substance of the animal or vegetable body itself; hence this view of the subject cannot be regarded as being free from error; and we feel more disposed to accord with the opinion of Mirbel.

> " C'est donc l'irritabilité," says he, " qui distingue à nos yeux les animaux et les vegetaux de la matière brute. Quand l'irritabilité s'éteint, toute ligne de démarcation s'efface."—p. 9.

Admitting the vitality of plants, the property by which it is chiefly characterized, is *Excitability*, which Mr. Keith defines the " capacity of being acted upon by the application of natural *stimuli*, impelling it (the plant) to the exertion of its vegetative powers." Light and heat only are enumerated as the natural stimuli of vegetative excitability by Mr. Keith; but to these we would add air, moisture, and electricity. The effect of light is evident, by the direction of the stems and branches towards it when plants are growing in a situation where it is only partially admitted. The vigour and colour of the plant, and the position of the leaf, also depends on the presence of light; as is exemplified in the pale hue and sickly appearance of plants growing in dark places; but the rationale is not explained. We may observe that in the dark the plant is too much exhausted of carbon by the formation of carbonic acid; whilst in the light this is prevented by the great affinity of light for oxygen. The turning of leaves when their upper surfaces have been forcibly directed from the light, is familiarly exemplified by turning a geranium which has been for some time exposed in a window. Mr. Keith adopts the opinion of Linnæus, that the change of position of the leafets of compound pinnated, articulated leaves at night, which he has denominated the *Sleep of Plants*, depends on the abstraction of light: but Mirbel seems disposed to regard light in this case as a secondary cause; and we are induced to believe that as those plants which exhibit this phenomenon possess a higher and more excitable irritability, which is exhausted by the stimulus of light, heat, and food, applied during the day, they require, like animals, an interval of rest; but it must, however, be observed, that this is a state of true contraction of the articulations of the petiole. We are rather surprised that neither of our authors have noticed the singular effect of light on the *Manjapumeram*, a tree found in Ceylon, the boughs of which drop and the leaves fold up as soon as the sun appears above the horizon; but as soon as it sets, the boughs rise, the leaves expand, and the whole assumes a fresh and vigorous appearance. The expansion of the flower, particularly those periodical openings and shuttings of some flowers, the Horologium Floræ of botanists, and the nutations of plants, are also ascribed to the action of light; which undoubtedly, although other causes may aid its influence, is the most active exterior agent.

To the action of heat, as a natural excitant of the vegetable irritability, both our authors justly ascribe the effect of the seasons on different plants; as they produce the phenomena of Frondescence or the protrusion of the leaves, efflorescence and the maturation of the fruit.

But besides being susceptible of natural stimuli, the irritability of some plants is readily excited by mechanical stimuli; and movements are produced, closely resembling those which are the effect of volition in the animal. This is illustrated by Mr. Keith, by the description of the movements occasioned by the application of extraneous bodies to the Sensitive Plant, Dionea *muscipula*, Drosera *rotundifolia*, Berberis *communis*, Cactus *tuna*, and Stylidium *glandulosum*. Our observations have enabled us to correct a mistake into which all writers have fallen regarding the seat of the irritability of Dionea, which is not in the whole of the upper disk of the lobes of the appendix of the leaves, but in three small spines only which rise on that disk; and which, on being touched, occasion the immediate collapse of the segments.

After hazarding a few remarks on the fanciful idea of *sensation* and *instinct* being connected with vegetable life, Mr. Keith concludes this chapter by some remarks on the *definition of the plant*, which, notwithstanding all that has been written on the subject, still remains unsatisfactory; nor are the difficulties removed by the attempts of either of our authors.

The twelfth and last chapter of Mr. Keith's work treats of the *Casualties affecting the Life of Vegetables*, comprehending wounds, diseases, and natural decay; but we have already too far exceeded our limits, and must here terminate our analysis. It is however necessary to state, that the second part of

M. Mirbel, besides an excellent introduction to systematic botany, contains a history of the rise and progress of the science, and very complete tables of terminology. Both works are illustrated by plates; but we should be deficient in candour did we not observe, that those of M. Mirbel are superior in design and execution.

In extending our remarks upon these works to a much greater length than some of our readers may think necessary, we have had two objects in view. In the first place, as the subject is scarcely known to the majority of the profession, we were anxious to give such an exposition of it as would satisfy the sceptical, that a knowledge of phytology is not only interesting in itself, but also useful, inasmuch as it assists in illustrating physiological inquiries, and extending our knowledge of the general doctrines of life: and, in the second place, that he who limits his researches in Botany to a mere knowledge of the names and exterior physiognomy of plants, and their places in a system of arrangement, has very little claim to the appellation of botanist. We do not mean however to undervalue a knowledge of the names and external characters of plants, which, in a strictly practical point of view, is, perhaps, all that is necessary for the medical practitioner; who, whatever his views may be, should certainly be acquainted with the apparatus of his art; and more particularly with regard to poisonous plants, a knowledge of which will always raise him in the esteem of his patients, while nothing will sink him more in their opinion, than an acknowledgment of his ignorance of the substance which is the cause of the mischief, for the removal of which his assistance is required. We are aware that these remarks will weigh but little with those who regard the exercise of their profession in no other light than as a mere source of pecuniary emolument. But it is not for such men that the Naturalist and Botanist traverse the globe, the Chemist lights his furnace, the Anatomist traces out the intricacies of organic structure, and the Physiologist unveils the laws of vitality; of whom Cicero observed, "ad Deos accedunt;" and for whose brow Science proudly entwines the enviable wreath of immortality.

III.

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(Continued from page 413.)

The first of the *Physiological* Papers, the twelfth of the volume, is intitled *Cases and Observations illustrating the In-*

fluence of the Nervous System in regulating Animal Heat. By Henry Earle, Esq.

This paper is an attempt to support, by pathological observations, the theory of Mr. Brodie, whose ingenious experiments first suggested the fallacy of the opinion, until then generally received, that animal temperature depends "on the chemical changes which the blood undergoes in the round of circulation." The following are the inferences drawn from the first case detailed:

> " It appears that a limb deprived of due nervous influence is of a much lower temperature than natural, notwithstanding there is no apparent diminution in the circulation of the blood; that a limb so circumstanced is incapable of supporting any fixed temperature, and is peculiarly liable to partake of the heat of surrounding media; and lastly, that it cannot, without injury, sustain a degree of warmth which would not be at all prejudicial to a healthy limb."—p. 179.

In a second case, the little finger having lost all sensation owing to the division of the nerve, for the cure of *tic douloureux*, it became incapable "of supporting such variations of temperature as were perfectly harmless to the rest of the hand." Another proof is, that paralytic limbs " are invariably found colder than any other part of the body;" and in our author's experience, wherever the nervous energy has been impaired, " the power of maintaining a healthy standard temperature has been in a greater or less degree lost;" although the circulation has remained apparently unaltered. On the other hand, it is well known that in all cases of morbid excitement, productive of an increase of temperature, there is a greater determination of blood to the part than is necessary for carrying on its healthy functions.

> " It appears then," concludes our author, " from the evidence which has been adduced, in the first place, that an integrity of the nervous system is essential to the evolution of animal heat, and that when any part of it is impaired by accident or disease, the due performance of this calorific function is either partially or generally deranged. Secondly, that the stimulus of arterious blood is necessary for the excitement of the brain and nerves, and likewise for the proper developement of animal heat. Thirdly, that there exists a considerable sympathy between the nervous and sanguiferous systems, and that an injury inflicted on a nerve is attended with an increased arterial action, and a local determination of blood. Lastly, that such a local determination, whether the effect of disease or injury, is accompanied by a sensible increase of temperature at the part."—p. 191.

The next paper of this class is the last of the volume, and contains some *Observations on a Change of Colour in the Skin produced by the Internal Use of Nitrate of Silver.* By J. A. Albers, M.D. Bremen.

We some time since had an opportunity of laying before our readers an instance of this effect of nitrate of silver, communicated by Mr. Harrold of Cheshunt; and we then noticed Dr. Albers' cases. The change appears to depend on the protracted internal use of the remedy; but no explanation of the phenomenon is attempted by Dr. Albers or Dr. Roget, who has added some additional evidences of the fact, from his own experience and that of others. The subject is one of considerable interest, affording a fair field for the ingenuity of those who have leizure for experimenting: and as nitrate of silver is too valuable a remedy to be thrown aside on account of this effect of its exhibition, it becomes an object of much importance to ascertain, as Dr. Albers' inquires, "What remedies might be prescribed to cure this alteration of the skin?"

The first of the *Surgical* papers, the fifth of the volume, is the *History of a Case of Wound of the Face requiring the Operation of Tying the common Carotid Artery, which was performed with success.* By Charles Collier, Esq.

This is another of several proofs which the surgical practice of late years has presented, of the safety and the propriety of tying the common carotid, when circumstances require it. The vessel, which was that of the left side, was "secured at about three fourths of an inch from the sternum." No untoward symptom followed the operation. The pulse, which was at its greatest height on the third day, did not exceed 120; there was no disturbance of the sensorium, nor any apparent deficiency of blood on the left side of the head; and the patient was discharged in perfect health fifty days after the operation.

The next case, which is one of uncommon interest, is also an instance of the utility of securing the carotid, although for a temporary object. It is intitled, *History of a Tumour successfully removed from the Face and Neck by previously Tying the Carotid Artery.* By William Goodlad, Esq.

The following is the description of this tumour: It extended "from near the external canthus of the left eye, down the cheek to the infra-orbitary foramen and the root of the ear, which was elevated by the tumour,and passing under it, it extended behind the mastoid process. Anteriorly, it extended to the chin, and to the trachea, which it partially covered, and hung pendulous over the clavicle. The circumference of the base of the tumour, when last measured, was twenty inches.

"In the upper portion, comprised between the cornu of the os hyoides upwards to above the zygoma, the tumour in the base was as large as, or larger than in its middle or apex; but below this point, its attachment to the neck was less extensive; and though hanging pendulous over the clavicle, its lowest connection with the neck, was three quarters of an inch distant from that bone. On elevating the tumour in this lower space with a hand on each side, and passing the fingers at the same time under it, it might clearly be ascertained that there was no connection with the vessels; but as it hung over the trachea, and was connected with it, it required a very careful examination to be convinced that they were not united. The cornu of the os hyoides was however moveable under the tumour, and independent of it; respiration was tolerably free, when in an erect posture, and on passing the fingers forcibly between these parts, I was pretty well convinced that they might be separated. The œsophagus here was too deep to be implicated in the disease.

" Above the cornu of the hyoid bone, the base of the tumour was very extensive and deep, impeding deglutition considerably. On directing the finger, passed into the mouth, towards the base of the ramus and angle of the maxillary bone, and into the fauces; the intervening substance appeared considerable, and authorized an opinion that the fauces would not be cut into, nor indeed exposed, by its removal. The submaxillary gland was pressed inwards, but did not appear enlarged or hardened, and the membane of the cheek was also healthy, though the tumour appeared in contact with it."—p. 113.

Although the parotid gland was enveloped in the disease, and other formidable difficulties presented themselves, yet, as death appeared inevitable if the tumour was allowed to remain, the operation was determined upon. Its various steps are perspicuously described; but as the assistance of the plate by which it is illustrated is requisite for the complete comprehension of the description, we will not transcribe it. The artery which was found beating at the bottom of the first incision, was tied as low as possible in the wound. After the entire tumour was removed, the following appearances were exhibited:
" the whole sterno-mastoid muscle was exposed, and its fibres dissected clean, except about half an inch from its insertion into the clavicle. The wound extended backwards from behind the mastoid process, to the trachea anteriorly, but became narrowed in the direction of the muscle at the lower part of the neck. The submaxillary gland was exposed, and about one-fifth of its substance, not appearing healthy, was removed. The digastric and the greater portion of the milo hyoideus were exposed, the ramus of the jaw was only covered by periosteum, except where covered by the masseter muscle, part of which, not appearing healthy, was dissected away; the whole of the condyloid process of that bone was laid bare in the same manner, and behind it the pterygoid muscles were also exposed. The membrane of the cheek was only covered by a cellular substance, which did not appear healthy; but sufficient skin was saved to cover the zygoma. The parotid gland was entirely removed."—p. 122.

The cure proceeded without any occurrence of importance, and in ten weeks the wound was healed. Mr. Goodlad remarks that a question may arise whether it would not be better in similar cases merely to tie the artery, and leave the diseased mass to slough away; but judiciously regards it as "unadvisable, since the sloughing of so large a substance would produce more constitutional derangement than its removal by the knife." We, however, conceive the hint to be important, now that the safety of tying the principal blood-vessels, where the circulation is unobstructed, is so thoroughly ascertained.

The ninth paper of the volume is *a Case of Ossification and Bony Growth of the Cartilages of the Larynx, preventing deglutition.* By Francis Travers, M.D.

The necessary consequence of such a state of disease, was the death of the patient. The following appearances were observed on dissection:

"The cricoid and arytenoid cartilages were much increased in size, and completely converted into bone; by pressing upon the œsophagus an obstruction was offered to the passage of food, and a distinct circular line was seen upon the posterior part of the œsophagus, occasioned by the pressure of the cricoid cartilage; both above, and below the obstructed part. The œsophagus was natural in appearance. The remaining cartilages concerned in forming the larynx and trachea appeared in a slight degree to partake of the same morbid change. The thyroid gland was not increased in size, but it was firmer than usual, and many small depositions of bone were distributed throughout its substance."—p. 152.

Case of Un-united Fracture of the Os Humeri, treated successfully by the Seton. By Josias Stansfield, Esq.

This case was admitted into the Leeds Infirmary, nearly eight months after the accident that had occasioned the fracture. It was, extremely favourable for the use of the seton, the fracture being nearly oblique and stretching from the insertion of the deltoid muscle to within two or three inches of the elbow joint: and the sulcus of the fracture was distinctly felt when pressure was made between the biceps muscle and the bone. In order to introduce the seton, an incision, an inch and a half long, was made through the integuments on each side of the bone, the biceps muscle drawn inwards, and "the cellular membrane being divided down to the sulcus," a curved needle, armed with a skein of silk doubled and well waxed, was pushed readily between the ends of the fractured parts. Pain and fever necessarily followed this operation; but by poulticing, until the suppuration was established, and supporting the strength, the union was effected, and the seton cord withdrawn in less than three months after its insertion.

The next paper we have to notice is the eleventh of the volume, a *Case of Gunshot Wound of the Shoulder Joint, where the Head of the Os Humeri, together with parts of the Humerus, were successfully removed.* By William Richard Morel, Esq.

This was a Waterloo case, and the patient's health had suffered so much from the irritation induced by the fractured portions of the head of the bone, that it was evident Nature could not, of herself, remove the offending part, and hence either amputation at the joint, or the operation resorted to were necessary. The latter was determined on. The subclavian artery being secured, by pressing on it with a boot hook, wrapped up in a piece of lint, where it passes over the first rib, a circular incision was made across and through the integuments and deltoid muscle, so as to form a flap. The muscle was then dissected from its connection with the bone, and the head of this also separated by dissection, a difficult step of the operation; as, the capsular ligament was thickened, and with the head of the bone formed a confused mass.

"This, however, being effected," proceeds our author, "I, by the application of the saw to that part of the bone into which the tendon of the pectoralis major is inserted, removed the anterior half of the bone, and with it two smaller fragments. This gave me an opportunity of examining the remaining half of the bone, which was thrown back under the edge of the cup of the scapula, or glenoid cavity as it is called. To remove this, it became necessary to separate the capsular ligament from its connection with the neck of the bone, and contiguous muscles, viz.; teres major, pectoralis major, latissimus dorsi, and subclavius. The remaining portion of the bone being now removed by the saw, the flap was brought down and preserved in contact with the lower portion of the deltoid muscle by slips of adhesive plaster, compress and bandage."—p. 165.

This is an operation which has not been often performed by many British surgeons. Circumstances must vary the mode of performing it; but we feel inclined to prefer that mode of making the flap recommended by Moreau, by which it is turned back upon the arm, as the head of the bone can then be more easily separated from its attachment, and the state of the glenoid cavity satisfactorily ascertained.

In the case before us the cure was completed in two months, the extremity of the humerus remaining about an inch and a half from the cup of the scapula; but, although, in every case, it cannot be brought back into the glenoid cavity, yet the saving of so useful a limb, in any form in which it can be employed, is a justifiable object of exultation for modern surgery. The case is, perhaps, somewhat defective in a practical point, inasmuch as the degree of elevation at which the arm was supported, is not stated.

History of a Case of Aneurism of the Femoral Artery, for which the Operation of Tying the external Iliac Artery was performed. By Charles Collier, Esq.

The patient, in this instance, sunk on the fourth day after the operation from gangrene, which had attacked the whole limb.

Observations on the Treatment of Varicose Veins of the Legs. By B. C. Brodie, Esq. F.R.S.

This is a very interesting paper. It is well known, that the majority of ulcerations of the legs which come under the care of the surgeon proceed from varicose veins; and without the destruction of these, no permanent cure of the ulcers can be effected. The mode of destroying them both by the cautery and the knife, is as old as Celsus; but the division of them under the skin so as to moderate the inflammation of the coats of the veins, and hasten their obliteration, is an improvement, the merit of which we believe is altogether due to Mr. Brodie. The operation is thus described:

"I have generally employed a narrow, sharp-pointed bistoury, slightly curved, with its cutting edge on the convex side, such as is delineated in the annexed drawing. Having ascertained the precise situation of the vein, or cluster of veins, from which the distress of the patient appears principally to arise, I introduce the point of the bistoury through the skin on one side of the varix, and pass it on between the skin and the vein, with one of the flat surfaces turned forwards, and the other backwards, until it reaches the opposite side. I then turn the cutting edge of the bistoury backwards, and in withdrawing the instrument the division of the varix is effected."—p. 198.

The hæmorrhage is readily stopped by a compress and bandage. In making the division, care should be taken not to divide extensively the soft parts below the varicose vessels; and to facilitate the union by the first intention, the patient should be kept for four or five days in bed; employing cold lotions, should any inordinate degree of inflammation intervene. Four cases are added illustrative of this practice.

On the Laceration of the Fibres of Muscles, particularly of the external Gastronemius. By James Wardrop, Esq. F.R.S. Edinburgh.

The circumstance stated in the title of this paper is generally "the consequence of some untoward or sudden action of the muscle." Its occurrence is denoted by a sudden sensation of sharp pain in some part of the muscle, and lameness. On examination, an inequality is perceptible at the pained part, a concavity being formed by the lacerated extremities of the muscular fibres. The part is tender to the touch, and the calf of the leg becomes swelled and tense, yet the injured part cannot always be pointed out by the patient.

The treatment recommended, is that which would naturally occur to the mind of a sensible surgeon. It consists in bandaging the leg in such a position, that the fibres may be placed and retained in contact; and enjoining rest until re-union has taken place.

History of a Case of the Cæsarian Operation. By Kinder Wood, Esq.

This case, like the majority of those of hysterotomy which have occurred in this country, proved fatal.

Little benefit can result from recording fatal cases of this operation, unless they can lead to a more successful practice. Our author feels disposed to regard that inflammation and the great debility "which are the two sources of fatality of the operation in this kingdom," as the consequences of the operation being too long delayed: and, undoubtedly, if an accurate prognosis can be early formed, we conceive nothing ought to prevent an earlier employment of the only means which can afford any chance for the preservation of the life of the mother and her offspring.

The last of the surgical cases, which is partly of a medical nature, is by the same author. It is intitled, *History of a very fatal Affection of the Pudendum of Female Children.*

This disease generally occurs in children under six years of age. About three days before the appearance of the local affection, the patient is attacked with listlessness, languor, rigor, and other symptoms of pyrexia; and the first notification of the genital inflammation is the complaint of pain in voiding the urine, or the cries and struggles of the child in performing this function.

> "When the genital organs are examined, one or both labia are found inflamed and enlarged, the inflammation is of a dark tint, and soon extends internally over the clitoris, nymphæ, and hymen; the pain in voiding the urine may induce a supposition that the inflammation extends into the urethra, and a thin secretion, which at this period may be observed coming from these parts, renders it not improbable that the lower part of the vagina may be affected."—p. 85.

The inflammation is rapidly followed by ulceration, and a thin acrid discharge from the vagina, which excoriating the neighbouring parts, extends the disease in every direction. There is considerable visceral disorder, the stool being slimy and offensive, and aphthæ often spread round the anus. According to the strength of the constitution, the disease is longer or shorter in running its course; but often before its termination, when that is fatal, the whole of the external organs of generation are destroyed, and emaciation, resembling that of marasmus, takes place. We have seen several cases of the diseases, which we have always ascribed to intestinal irritation; and have generally seen the symptoms yield to a combination of purgatives, combined with infusion of bark acidulated with diluted sulphuric acid. Our author recommends nearly a similar plan of treatment, advising, as a local application, the liquor plumbi acetatis dilutus; and when the ulceration is stationary, after the inflammation has subsided, the unguentum oxidi plumbi, which we have found to be rendered much more useful by an addition of extract of henbane, in the proportion of a drachm to an ounce of the ointment.

This paper strongly illustrates the necessity of the attention of practitioners being directed to the cultivation of forensic medicine. The author, with great candour, relates a case of this disease which proved fatal, and regarding which he had been rashly led to hazard an opinion, which might have affected the life of an innocent individual. His experience fortunately soon enabled him to discover his error, and avert the threatened evil.

The Medical Papers, properly so called, are three only in number. The first we will notice, the *History of a Case of Chorea Sancti Viti occurring in an Adult, and cured in an unusual manner*, is by the author of the two last surgical papers.

This is a very singular and interesting case of the disease. The individual attacked was a married woman, and at the time suckling her infant. Three days after the attack, the involuntary motions were observed to keep a regular measure, or time, as if the patient was dancing to music; and she afterwards acknowledged that an involuntary idea of a tune was present to her mind, with which the involuntary motions were associated. Some circumstances induced the trial of the effect of a drum; when it was found that the roll of this instrument broke the diseased association, and consequently checked the paroxysm; so that, by watching the commencement of the attack, and rolling two well-braced drums, "before she arose from the chair," the paroxysm, being thus forcibly checked, soon altogether ceased. During the existence of the disease the alvine excretions were sometimes offensive, unnatural in colour, and slimy; "but at other times perfectly natural:" the pulse was never under 108, but frequently rose to 130; and there was no aberration of intellect. The disease occasionally recurred, when the drum was again found useful; but, after becoming pregnant, it lost its effect; and she was ultimately cured by bleeding.

The second of the medical papers, is the *History of two Cases of Angina Pectoris.* By Samuel Black, M.D. of Newry.

Both of these cases terminated fatally; and on the dissection of both, a circumstance was perceived, which was also present in two other cases that had occurred to Dr. Black—"an ossification, more or less complete, of the cartilages of the ribs;" and also of the coronary arteries, from which the following opinion, relative to the cause of the complaint, is suggested:

"8thly. I have stated it to be my opinion, that the primary and original cause of this disease, is, perhaps, in every instance an ossification of the coronaries. This proposition is perhaps too general, and some qualification of it may be more reconcileable with the reserved spirit of just induction. But if I am permitted to subjoin these words, viz. "or some organic lesion, most usually of an osseous nature, existing at the origin of the circulation," the proposition will then be as true as most others in pathology."—p. 80.

We confess our experience does not permit us to give an opinion as to the value of this theory. The disease does not occur in women; but we have seen instances of ossifications in the heart of female subjects, attended with other circumstances likely to impede respiration, nearly as effectually as ossification of the cartilages of the ribs. Dr. Black, considering that the disease in general has appeared to be connected with obesity, or a plethoric habit, proposes abstinence as a remedy; which he conceives might succeed, if employed on the "first threatening of the disease." We doubt much the possibility of reducing it to practice.

The last paper of this class is intitled *Some Observations concerning the Medical Properties of Pyrola Umbellata, and the Arbutus uva ursi, of Linnæus;* by Professor Smith Barton, of Philadelphia.

In this paper, which is a letter to Mr. Brodie, the Professor feels himself neglected by the remark of Dr. Somerville, that he had found no medical notice of this beautiful little shrub, except in Pursh's Flora; and refers to his "Collection for an Essay towards a Materia Medica of the United States." He draws an analogy between the effects of the Pyrola and the Uva *ursi*, both as a diuretic and an antilithic; and observes of the latter,

"It has even seemed (however different may be the explanation of the fact) to favour the expulsion of granules of calculi, an effect which Dr. Hencher, a long time ago, ascribed to various vegetable astringents."—p. 146.

The letter contains, besides some desultory remarks on typhus fever and dropsy, an intimation of the Professor's agreement in the opinion of Pursh, that the Pyrola *umbellata* is not a legitimate Pyrola.

The last paper we have to notice, the fourteenth of the volume, is *An Account of the last Illness and Death of Professor H. Benedict de Saussure;* by Louis Odier, M.D.; with *Additional Particulars connected with Professor Saussure's Case,* by Alexander Marcet, M.D.

Even the infirmities of celebrated men claim our respect; and therefore the account of the illness which deprived the world of the accomplished Philosopher who is the subject of this paper, cannot be perused without interest. The proximate cause of the disease which terminated in the death of Saussure, "was the effusion of a great quantity of serosity in the ventricles, and between the membranes of the brain." The paper contains many valuable pathological observations; and the additional particulars are curious, inasmuch as they contain the only "existing record" of the medical practice of the immortal author of the doctrine of latent heat: but for the gratification which these details will afford them, we must refer our readers to the *Transactions.*

PART IV.

FOREIGN MEDICAL SCIENCE AND LITERATURE.

CHEMISTRY.

THE following *Observations on some Combinations of Azote with Oxygen,** were read by *M. Dulong*, at the Academie des Sciences of Paris, on the 9th September last.

"Chemistry sometimes presents combinations so difficult to isolate, and the production of which is accompanied with circumstances so complicated, that the most experienced and accurate observers do not arrive at the knowledge of their properties, except after repeated experiments, wherein all the possible errors are in some sort extirpated before the truth is ascertained.

"Among these obscure compounds may be ranged the combination of azote with oxygen, being known under the names of *vapeur rutilante*, nitrous vapour, or nitrous acid gas. Notwithstanding the numerous works upon the subject, it is only since the last experiments of M. Gay Lussac, that its true proportions have been known. I, for my part, have made some experiments upon the same subject; and as my results differ in some points from those obtained by M. Gay Lussac, it is my intention to submit them to the judgment of the Academy.

"When neutral nitrate of lead, previously dried, is distilled, a very volatile liquid, of an orange yellow colour, is obtained, which had already been noticed by M. Berzelius, in his researches upon the combination of nitrates, but which has been examined more minutely by M. Gay Lussac; the result of whose inquiries is, that this liquid ought to be considered as the acid of the nitrates, in which the elements are retained in combination by the action of water. The existence of water in dried nitrate of lead, the proportions of which correspond with those of nitrates perfectly deprived of water, offers a very singular exception to the law of the composition of salts; and as it is more from analogy than direct experiment, that M. Gay Lussac has been led to adopt this opinion, I have attempted to subject this liquid to a rigorous analysis; which may be compassed by exposing copper or iron, at a red heat, to the action of the acid in vapour. To avoid the errors which might result from the action of the acid upon the corks employed in the ordinary apparatus, I had, at first, made use of a glass apparatus, all the parts of which were soldered, so that the acid could be in contact only with glass and the metal which it was to decompose; but I encountered difficulties during the experiment, which made me employ a porcelain tube with corks. After some precautions, unnecessary to be mentioned here, the only error which could occur from its use, was the absorption of a very small quantity of acid by the cork; every thing was so arranged, that nothing could be disengaged which might complicate the products of the operation.

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* *Annales de Chimie, &c.* tome ii. p. 37.

" The iron or copper, in very fine wire, and well tempered, were employed in great excess, and all the oxygen of the acid was absorbed by the metal; the gas, not absorbed, was then passed through a tube containing the muriate of lime, before passing into the bell-glass which terminated the apparatus. It is easily seen, that a considerable degree of accuracy might be attained, by determining the weight of the metal, that of the tube of muriate of lime, both before and after the experiment; and the volume of the disengaged gas. I made several experiments after this method, the several results of which did not present me with any sensible differences.

" In one of these analyses the azote was pure, or at least the quantity of hydrogen it might contain was so small, as not to be affected by the ordinary tests. In general, the proportion of hydrogen was extremely small. I will here give the details of an experiment, in which the proportion of this gas was the largest, and made, nevertheless, only 32 thousandths of the volume of the azote—

Weight of the acid analysed...........	7·935 gr.
Increase in weight of the iron..................	5·660 gr.
Increase in weight of the muriate of lime....	0·917 gr.
Volume of the dry gas at 0° B. 0·76.........:	1·96 b.
100 p. of this gas contained of hydrogen......	3·22 p.

This proportion of hydrogen corresponds with a quantity of water; which, united to that absorbed by the muriate of lime, would form only 6 thousandths of the weight of the acid analysed.

" As this quantity is much below the smallest proportion of water which can be admitted as an essential element of a combination, it appears to me that it ought to bé attributed to the moisture of the air, or to that which remains attached to the glasses, and which it is impossible to avoid completely in manipulations a little complicated. Moreover, this acid does not present itself under an orange colour, except when it is anhydrous; for I have remarked, that the smallest quantity of water is sufficient to render it green, as will be afterwards explained. The liquid acid obtained by the distillation of nitrate of lead, does not, therefore, contain any water; nor is any contained in the dried nitrate of lead.

" In calculating the proportion of the azote to the oxygen, in the liquid acid, by the above results, we fixed, that 100 of azote are combined with 233·8 of oxygen. These proportions differ very little from those which may be deduced, as the composition of the nitrous acid gas, from the full report given by M. Gay Lussac; for we have, from this report, for 100 of azote, 228 of oxygen.

" The identity of the nitrous acid gas, and of the liquid acid, obtained by the distillation of nitrate of lead, appeared to me, at first, so extraordinary, that I thought some error must have crept into the things weighed; but after having repeated the same experiment several times, with results varying from each other in a very slight degree, I was convinced of their identity. Hence it is evident, that the nitrous acid gas cannot be a permanent gas. To ascertain this I made the following experiment.

" I put into two cylindrical reservoirs two glass tubes with cocks; one of them containing nitrous gas, and the other oxygen gas; by means of two pannels with stop-cocks, in which water was constantly kept up at the same level, I regulated the flowing of this liquid into the two jars; so that the quantity of nitrous gas displaced by the water in one of the cells was a little less than twice the quantity of oxygen gas disengaged during the same time from the other cell: the two gases then separately passed through a long tube filled partly with muriate of lime and lime, and were then united to each other in a tube of a larger calibre, containing fragments of porcelaine. By this method the gases, after being perfectly mixed, were changed into almost pure nitrous vapour, containing only a small excess of oxygen gas. The gaseous mixture was then passed through a curved tube, subjected to an artificial cold of 20° below zero.

After having passed some portions of gas through this apparatus, I obtained in the tube, when cooled, a liquid slightly tinged of a green colour, diffusing through the air copious vapours of a yellow colour; and which was transformed, while pouring off, into an orange-yellow coloured liquid, possessing all the properties of that obtained by the distillation of nitrate of lead. This experiment leaves no doubt, and we must admit that the compound of azote and oxygen, generally known under the name of nitrous acid gas, is not a gas at the temperature and ordinary pressure of the atmosphere, but a liquid, which, to avoid all ambiguities, I will for the present name the dry or anhydrous nitrous acid.

" I found 1·451 to be its specific gravity, and 28° the temperature at which it enters into ebullition, the barometer being at 0·76.

" If the physical properties of this combination have been hitherto unknown, it is because the vapour formed by it possesses a very powerful *elasticity* at the ordinary temperature; and, moreover, in the greater number of circumstances in which it is produced, it is intermingled with permanent gases, which prevent its condensation. From this we easily perceive that the condensation of the dry nitrous acid will be so much the more difficult, and that it will be necessary to employ, in order to produce it, a diminution of temperature so much the more considerable, as the proportion of the extraneous gas is greater. This explains the differences observed in the products of the distillation of nitrates. When the base of the salt has only a weak affinity for the acid, and is freed from its combination at a very low temperature, the nitric acid is decomposed only into oxygen, and into nitrous acid; and when we even suppose that these two bodies are disengaged at the same time, the vapour of the nitrous acid making at least two thirds of the gaseous mixture, it might be condensed in part, even at the temperature of 15°, as happens in the nitrate of lead. When, on the contrary, the base has a strong affinity for the acid, and requires the employment of a very high temperature for the decomposition of the salt, the greater part of the nitric acid is then reduced into oxygen and azote; and a considerable degree of cold is necessary to liquefy, even in part, the nitrous acid. Thus, in subjecting the gas which is disengaged during the decomposition of the nitrate of barytes to a cold of 20° below zero, I did not obtain a single drop of liquid; because, as we know, the greatest part of the nitric acid is then formed into a mixture of oxygen and azote.

" Again, it is for this reason, when we wish to make dry nitrous acid, directly, with oxygen and nitrous gas, that it is necessary to make it so as there may be only a small excess of oxygen, as I have before mentioned; otherwise we should obtain only a small quantity of liquid.

If we pass through the above described apparatus a mixture of nitrous and oxygen gas, in which there is one part of the former to four of the latter, there is still condensed in the tube, when cooled, a liquid of a very deep green colour, and much more volatile than the preceding. I made an analysis of this liquid by the same method I employed in analysing the dry nitrous acid; and I found that it was composed of 100 parts of azote and 207 parts of oxygen by weight, in one experiment; in another, I found 216 parts of oxygen and the same quantity of azote.

"It is besides evident, from the manner in which this liquid has been formed, that water does not enter into its composition. The proportion of oxygen that it contains is less than that of the nitrous acid; but it is greater than what ought to be found in the acid of the nitrites, named per nitrous, by M. Gay Lussac. Hence, it is more than likely, that this is not a homogeneous combination, but a simple mixture of dry nitrous acid, and of another compound of nitrous gas and oxygen, in which the proportion of nitrous gas is stronger; and this conjecture is strengthened by what happens during the distillation of this liquid. Indeed, when I subjected it to a gentle heat, the green colour gradually vanished, as the volatilization went on, and there remained a variable quantity of dry nitrous acid. If the green liquid is not a simple solution of nitrous gas in dry nitrous acid, it ought to contain another combination of nitrous gas and oxygen, probably in the proportions of the pernitrous acid, which it may perhaps be possible to isolate by repeated distillations, since there existed a difference, in truth very trifling, between the boiling points of the green and of the orange-coloured liquids. This is a question which I will endeavour to determine on account of its importance, notwithstanding the difficulties it presents. When we put the dry nitrous acid in contact with a large quantity of water, stirring the mixture, it is immediately decomposed; a proportion of nitrous gas is disengaged, which varies according to the rapidity with which the decomposition goes on. If, on the contrary, we put the same acid in contact with a small quantity of water, no gas is disengaged; but the acid becomes of a very deep green colour: this happens when we pour the dry nitrous acid, drop by drop, into any quantity of water; because this acid, being heavier than water, gains the bottom of the vessel, undergoing the change of colour above-mentioned. It is evident, from what has been said, that the conversion of the orange-coloured acid into the green-coloured, in this circumstance, ought to be ascribed to the decomposition of a part of the dry nitrons acid into nitric acid, which is soluble in water, and into nitrous gas, which combines with the remainder of the undecomposed acid. Finally, if we mix diverse portions of nitrous acid, successively, with a certain quantity of water, the disengagement of nitrous gas produced by the same weight of acid will always go on diminishing, until it entirely ceases, although the liquid continues to absorb nitrous acid. The water will also successively change its colour, to a greenish blue; to a green becoming deeper by degrees; and, finally, to an orange-yellow. These varieties of colour are the same as those long since observed in nitric acid of different degrees of concentration, when variable proportions of nitrous gas are passed through it. It appears, then, that this gas acts, in the latter case, in bringing back a portion of the nitric acid to the state of nitrous acid, and in passing itself to the same state. As to the nitric acid which is found mixed, in very different proportions, with these several combinations of oxygen and azote, according to the manner in which they are obtained, it does not seem to have any sensible effect upon their colour. Nevertheless, it would not be correct to suppose that these mixed acids are only simple mixtures; for nitrous acid seems to have an affinity for nitric acid, if we form our opinion of it from the recent observations of Sir H. Davy upon the properties of the nitro-muriatic acid.

" The anhydrous nitrous acid, when mixed with a strong solution of potass, is decomposed, and nitrous gas is disengaged, but in smaller quantity than when the same decomposition is affected by water; some nitrate and some nitrite of potass being formed. With liquid ammonia the action is extremely violent; and nitrous gas mixed with azote is disengaged; which proves that a part of the ammonia has been decomposed.

" When we bring nitrous acid, in the state of vapour, into contact with caustic and dry barytes, placed in a tube, at the ordinary temperature, the vapour is slowly absorbed; but at a temperature of about 200°, the barytes suddenly becomes incandescent, and an elastic fluid is disengaged. The resulting combination melts, and is afterwards very difficult to dissolve: whilst there is a formation of nitrate and of nitrite of barytes. It is certainly a very remarkable phenomenon; and the explication of which does not appear easy to me, when barytes is transformed into nitrate and nitrite, at a temperature which seems to be much higher than what would be necessary to decompose those two salts when formed.

I endeavoured to determine the action of the different combustible bodies upon the nitrous acid in the state of vapour; but all the phenomena which I observed might easily have been anticipated from theory, and render unnecessary my relating them. I shall only mention, that all the experiments confirmed the opinion that nitrous acid yields the oxygen which enters into its composition less easily than euchlorine: iodine, for example, may be sublimed in this vapour without undergoing any alteration: sulphur, and even the inflammation of phosphorus in it, requires a higher temperature than in pure oxygen. The anhydrous nitrous acid combines, without undergoing any decomposition, with concentrated sulphuric acid; and, it is probable, after the experiments of M. Gay Lussac and my own, that the crystalline substance described by M.M. Clement and Desormes, in the Memoir, wherein they have explained the formation of sulphuric acid, is nothing but this combination."

PART V.

MEDICAL AND PHYSICAL INTELLIGENCE.

NOTICE TO MEDICAL STUDENTS.—*Apothecaries' Hall, Sept.* 26, 1816: The COURT of EXAMINERS have determined that all those persons who are *now* about to prosecute their studies in London with a view to practise as Apothecaries in England or Wales shall, before they are admitted to examination, produce a certificate of attendance for *six months at least* on the physicians' practice of some public Hospital, Infirmary, or Dispensary; and, that all those students, who have obtained certificates of attendance on lectures and hospital practice *previously* to the date hereof, shall be admitted as heretofore. (By Order of the Court), JOHN WATSON, Secretary.

EXAMINATIONS IN BOTANY.—On Thursday, November the 28th, the Court passed a Resolution, "That by MEDICAL BOTANY is to be understood, those indigenous plants only, which are contained in the *Pharmacopœia Londinensis*, and such indigenous plants as are esteemed of a *poisonous* quality."

We think it highly expedient this Resolution should be made as public as possible, because we know many students have understood that the Court meant to institute a very elaborate examination in Botany, including the systematic arrangement of Linnæus, &c. and whom this NOTICE will undeceive.

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WHOEVER has the respectability and advancement of the Profession at heart, must rejoice at the appearance of the following regulations with respect to the mode of conferring medical degrees in MARISCHAL COLLEGE, UNIVERSITY OF ABERDEEN:

1. No person shall be received as a candidate for the degree of M.D., unless he have laid before the Senatus Academicus satisfactory evidence of his possessing a good and respectable character, and of his having received a liberal education.

2. No person shall be received as a candidate for the degree already mentioned, until he have produced, to the Senatus Academicus, certificates of his having attended a Course of Lectures in

Anatomy, Chemistry, Materia Medica, Practice of Physic, and Botany, (if he has had an opportunity of studying the branch last mentioned,) at some university or celebrated school, under professors or teachers of reputation.

3. In every case where the candidate for a degree in medicine shall happen to be in Aberdeen, or at a convenient distance from that city, he shall be required to appear before the Senatus Academicus, and in their presence be examined by the medical and other professors, on the different branches of Medical Science; on his knowledge of the Greek and Latin Languages; and on such other branches of Literature as they shall see proper.

4. When a candidate for a degree in medicine is so circumstanced, by reason of his distance from Aberdeen, that he cannot appear in person to be examined, he may be recommended and attested by two physicians. In this case, these physicians must themselves be regular graduates in medicine; they must be known, either personally or by reputation, to the professor of medicine, or to some of the members of the faculty; and they must attest, that what is contained in the first and second regulations, is in all respects applicable to the candidate: that they have examined him on the different branches of medical science, and are satisfied, by his answers, that his acquirements are such as to entitle him to the degree of M.D.; or, in cases where, from distance of place, such examination cannot be obtained, that they have been long personally acquainted with him, and know that his medical education is as has been above specified; that he has been for years in established practice as a physician, and in that capacity has rendered himself useful and respectable.

5. When the candidate has been settled for years, and still is in respectable medical practice, in the East or West Indies, or other foreign parts, so that his situation precludes his presenting himself for examination either at Aberdeen or by the attesting physicians; in such cases, the attestations shall bear, in the most ample terms, that the candidate's moral character is, and his education has been, such as are prescribed in the first and second regulations; that his practice has rendered him useful and respectable in his profession; and that the attestors know him to be in all respects worthy of the degree which he solicits.

6. Every candidate for a medical degree, if required, shall declare and promise, that he neither already has, nor at any future period of his life shall have, the smallest connection with vending or patronizing, in the way of trade, any patent specifics or drugs, or what are commonly called quack medicines, nor allow his name to be used in any advertisements or publications of that nature; and that before receiving his degree he shall present to the faculty a formal letter to the above purpose.

7. No degree of M.D. shall be granted, until the Senatus Academicus have taken into consideration the character and qualifications of the candidate at two different meetings, to be held at the interval of fourteen days; except in cases of urgency, which cases shall be determined by the faculty.

A METEOROLOGICAL TABLE,

From the 21st of October, to the 20th of November, 1816,

KEPT AT RICHMOND, YORKSHIRE.

230 Miles NW from London.

D.	Barometer.				Therm.		Rain Gage.	Winds.	Weather.
	Max.		Min.		Max	Min.			
21	29	38	29	24	51	38		NW..	1 Sun..
22	29	50	29	35	50	36		W..	1 Sun.. & Sh. 2 Sun...
23	29	46	29	34	47	35	04	W..SW..	1 Sun.... 4 Rain.
24	29	27	29	18	44	40	21	S.	1 Rain..
25	29	23	29	04	48	32	25	ESE..	1 Cy.. 2 Rain.. 4 Starl....
26	29	47	29	44	44	32		S..SE..	1 Mist.. 2 Sun...
27	29	47	29	45	49	46		NE..	1 Sun.. 2 Rain. 3 Cy...
28	29	40	29	27	51	46	08	N..	1 Mist... 3 Rain.
29	29	25	29	11	52	46	12	NE.SE.	1 Mist... 2 Sun.. 4 R..
30	29	07	29		49	45		N.	1 3 4 Cy... 2 Sun.
31	28	98	28	96	50	45	27	NE..NbW.	1 3 4 Rain.. 2 Sun.
1	29		29		49	33		NW..	1 Cy.. 3 Sun..
2	28	98	28	98	46	38	15	SW.SE.	1 Sun... 4 Rain..
3	29	47	29	36	46	40	11	EbN.	1 Rain..
4	29	55	29	53	50	42		N..NE..	1 Sun..
5	29	38	29	17	48	43	15	NE.	1 Cy... 4 Rain..
6	29	02	28	93	48	31		NbE.NW.	1 Cy... 4Mn...&Sh of Sn.
7	29	13	29	05	35	22		WbN.	1 Sun...
8	28	79	28	48	34	30	16	SW.S..	1 Sun... 4 Snow..
9	28	98	28	54	41	26		SW..SE..NW....	1 Sun...
10	29	20	29	14	31	23		W..	1 Sun...
11	28	90	28	56	40	29	30	SW...	1 S... 2Cy... 3Sn... 4Stl...
12	29	15	29	05	49	39		WNW..W....	1 Sun...
13	29	22	29	09	49	34	15	W...	1 S... 2 S.. & Sh of Sn..
14	29	06	29	02	39	26		W..	1 S.. & Sh of Sn. 4 Stl....
15	29	50	29	36	36	29	Melted Snow	NW..	1 S. & Sh of Sn. 4 Stl....
16	29	66	29	66	36	29		NW..	1 Sh of Sn. & S. 4 Stl....
17	29	43	29	30	35	31	19	WSW.S.	1 Sun.. 2 Cy.. 3 Snow..
18	29	30	29	26	40	32		SW..	1 Sun..
19	29	44	29	36	46	36		SW..	13 Sun. 24 Cloudy..
20	29	56	29	47	47	42		SSW..	1 Sun.. 3 Cloudy..

THE quantity of rain during the month of October was 2 inches 10-100ths.

Observations on Diseases at Richmond.

The weather has been so very unfavourable that the harvest is not all got in, yet the district continues comparatively healthy. The Hooping Cough, Chicken Pox, and Scarlet Fever do not spread. There have been more cases of Congestion of the Liver and Obstipatio than usual. Cough, sometimes with and sometimes without fever, has been common. Diarrhœa and Cholera have rarely occurred.

METEOROLOGICAL TABLE FOR LONDON,

From the 20th of OCTOBER, to the 19th of NOVEMBER, 1816,

By Messrs. HARRIS & Co.

Mathematical Instrument Makers, 50, High Holborn.

M.	D.	Therm.			Barom.		Rain Guage	De Luc's *Dry.*	Hygrom. *Damp.*		Winds.		Atmo. Variation		
	20	45	50	42	29^{1}	29^{6}			10	8	W	wnw	Fog	Fine	Clo.
◐	21	44	50	45	29^{6}	29^{6}			9	10	NW	Wva	Fog	Rain	Clo.
	22	46	52	44	29^{7}	29^{8}	15		11	8	W	WSW	Rain	Clo.	——
	23	45	49	45	29^{9}	29^{9}	20		9	9	SW	S	Fog	Clo.	——
	24	47	51	46	29^{8}	29^{8}			10	12	SE	E	Clo.	Rain	——
	25	45	52	45	29^{7}	29^{7}	32		10	10	NE	ENE	Clo.	Rain	Clo.
	26	44	50	42	29^{6}	29^{7}	12		9	10	E	ENE	Fine	Rain	Clo.
	27	45	51	43	29^{5}	29^{7}	10		8	8	ENE	NE	Fine	——	——
	28	44	48	44	29^{7}	29^{6}			9	9	NE	E	Fine	Clo.	——
○	29	47	52	45	29^{7}	29^{7}			8	9	ENE	ENE	Fine	——	Clo.
	30	46	52	47	29^{5}	29^{4}			10	10	SE	ESE	Rain	Fine	Rain
	31	47	52	46	29^{4}	29^{5}	21		11	11	SSE	SE	Fog	Rain	——
	1	47	51	40	29^{7}	29^{4}			10	10	NE	WSW	Fog	Fine	Clo.
	2	41	46	45	29^{1}	29^{2}			9	9	wnw	SSE	Fog	Rain	——
	3	48	51	41	29^{5}	29^{6}	25		7	9	S	NE	Fine	——	——
	4	45	50	43	29^{4}	29^{7}	32		10	14	NE	N	Rain	——	Fine
	5	45	55	47	29^{7}	29^{6}	29		13	11	NE	SSE	Rain	——	Fine
☽	6	51	55	40	29^{1}	29^{1}	12		10	11	SE	WSW	Fog	Rain	Fine
	7	42	45	32	28^{8}	29^{4}	14		10	6	SW	W	Fine	Clo.	Fine
	8	27	33	39	29^{5}	29^{9}			5	6	W	SSE	Fog	Fine	Clo.
	9	40	41	33	29	28^{9}			5	7	SW	W	Fine	Fine	Rain
	10	35	39	29	29^{1}	29^{5}	15		6	5	W	W	Sno.	Fine	——
	11	30	43	39	29^{8}	29^{1}	18		4	10	W	W	Fine	——	Rain
	12	41	46	43	29^{1}	29^{8}	10		10	20	W	SW	Fog	Rain	——
	13	50	55	40	29^{7}	29^{8}	12		20	12	W	WSW	Clo.	Fine	Fine
	14	44	52	34	29^{5}	29^{5}			7	5	W	W	Fog	Fine	——
●	15	36	43	31	29^{6}	29^{8}			5	6	W	NNW	Fine	——	——
	16	33	39	30	29^{9}	30			5	6	NNW	NNW	Fine	——	——
	17	33	40	36	30^{1}	30			8	10	WSW	WSW	Fine	——	——
	18	44	49	35	30	29^{7}			10	10	SW	WSW	Fine	Rain	Fine
	19	43	47	36	29^{4}	29^{9}	8		10	14	S	S	Fog	Fine	——

The quantity of rain during the month of October is 2 inches 55-100ths.

BILL OF MORTALITY *from October 22 to November 19, 1816.*

		Oct. 29.	*Nov. 5.*	*Nov. 12.*	*Nov. 19.*	
CHRISTENED.	Males....................	213	210	208	248	
	Females...	176	218	201	249	
		389	428	409	497	Total, 1723.
BURIED...........	Males....................	145	169	164	209	
	Females......	152	171	166	167	
		297	340	330	376	Total, 1343.
OF WHOM HAVE DIED...	Under 2 Years.	83	79	109	94	
	Betw. 2 and 5	31	29	44	33	
	5 and 10	14	14	13	19	
	10 and 20	8	15	15	17	
	20 and 30	23	29	21	31	
	30 and 40	25	35	27	28	
	40 and 50	35	38	28	38	
	50 and 60	27	33	24	36	
	60 and 70	26	31	18	31	
	70 and 80	16	23	16	31	
	80 and 90	9	11	11	26	
	90 and 100	2	3	1	2	
SMALL POX................		1[illegible]	-	10	11	Total [illegible]

A REGISTER OF DISEASES

Between SEPTEMBER 20th, and OCTOBER 19th, 1816.

DISEASES.	Total.	Fatal.	DISEASES.	Total.	Fatal.
Abortio	16		Epistaxis	5	
Abscessio	18		Erysipelas	14	1
Acne	3		Erythema *nodosum*	3	
Amaurosis	2		Exostosis	1	
Amenorrhœa	26		Febris *intermittent*	12	
Amentia	1		—— *catarrhalis*	53	
Anasarca	24	5	—— *Synocha*	10	
Aneurisma	1		—— *Typhus mitior*	16	
Anorexia	5		—— *Typhus gravior*	6	1
Aphtha *lactentium*	10		—— *Synochus*	27	
——— *anginosa*	2		—— *Puerpera*	2	
Apoplexia	7	4	—— *remit. Infant*	22	2
Ascites	16	4	Fistula	5	
Asthenia	32		Furunculus	6	
Asthma	76	8	Gastrodynia	31	
Atrophia	2	2	Gonorrhœa	18	
Bronchitis *acuta*	6	1	Hæmatemesis	2	1
——— *chronica*	9		Hæmaturia	1	
Cancer	8	3	Hæmoptöe	14	1
Cardialgia	11		Hæmorrhois	33	
Carditis	1		Hemiplegia	4	1
Catarrhus	141		Hepatalgia	3	
Cephalalgia	34		Hepatitis	17	
Cephalæa	14		Hernia	4	1
Chlorosis	16		Herpes *Zoster*	10	
Chorea	4		——— *circinatus*	2	
Cholera	16		——— *labialis*	2	
Colica	20		——— *præputialis*	1	
—— *Pictonum*	7		Hydrargyria	1	
Contractura	1		Hydrarthyrus	1	
Convulsio	10	1	Hydrocele	1	
Coryza	7		Hydrocephalus	8	5
Cystitis	1		Hydrothorax	4	2
Cynanche *Tonsillaris*	42		Hypochondriasis	6	
——— *maligna*	3		Hysteralgia	1	
——— *Trachealis*	3		Hysteria	22	
——— *Parotidea*	7		Icterus	6	1
Diabetes.	2		Impetigo *figurata*	1	
Diarrhœa	78	1	——— *sparsa*	1	
Dysenteria	10	1	——— *erysipelatodes*	2	
Dyspepsia	81		——— *scabida*	5	
Dyspnœa	23		Ischias	1	
Dysphagia	1		Ischuria	3	
Dystocia	2		Lepra	4	
Dysuria	10		Leucorrhœa	9	
Ecthyma	2		Lichen *simplex*	3	
Eneuresis	4		Lithiasis	2	
Enteritis	6	1	Lumbago	6	
Entrodynia	22		Mania	7	
Epilepsia	3		Melancholia	12	

DISEASES.	Total.	Fatal.
Menorrhagia…………………	24	
Morbi *Infantiles**………	104	3
Morbi *Biliosi**……………	67	
Nephralgia…………………	4	
Nephritis……………………	4	
Neuralgia……………………	4	
Obstipatio…………………	35	
Odontalgia…………………	21	
Ophthalmia…………………	45	
Otalgia………………………	8	
Palpitatio…………………	2	
Paracusis…………………	2	
Paralysis…………………	8	1
Paraplegia…………………	2	
Paronychia…………………	6	
Peripneumonia……………	11	1
Peritonitis………………	5	
Pernio………………………	9	
Pertussis…………………	17	1
Phlegmasia *dolens*………	1	
Phlogosis…………………	19	
Phrenitis…………………	2	
Phthisis *Pulmonalis*……	32	13
Plethora……………………	11	
Pleuritis…………………	18	
Pleurodyne………………	5	
Pneumonia…………………	33	5
Podagra……………………	5	
Polypus……………………	1	
Pompholyx *benignus*……	4	
Porrigo *larvalis*…………	10	
——— *decalvans*………	1	
——— *scutulata*………	4	
——— *favosa*……………	1	
Prolapsus…………………	4	
Prurigo *mitis*……………	2	
——— *senilis*…………	6	
Psoriasis *guttata*………	5	
——— *gyrata*…………	3	
——— *inveterata*……	6	
Purpura *simplex*………	1	
Pyrosis……………………	4	
Rheumatismus *acutus*……	37	
——— *chronicus*…	68	
Roseola *varicellosa*……	1	
Rubeola……………………	35	2
Scabies……………………	65	
Scarlatina *simplex*……	18	
——— *anginosa*………	8	
——— *maligna*………	2	
Scirrhus……………………	1	
Scorbutus…………………	1	
Scrofula……………………	24	
Spasmi………………………	11	
Splenitis…………………	2	
Strictura…………………	5	
Strophulus *intertinctus*…	7	
——— *confertus*………	3	
Sycosis *menti*…………	2	
——— *capillitii*………	1	
Singultus…………………	1	
Syphilis……………………	47	
Tabes Mesenterica………	4	1
Tic Doloreux……………	1	
Vaccinia…………………	54	
Varicella…………………	11	
Variola……………………	24	5
Vermes……………………	27	
Vertigo……………………	19	
Urticaria *febrilis*………	4	
Total of Cases …………	2315	—
Total of Deaths…………	……	79

* *Morbi Infantiles* is meant to comprise those Disorders principally arising from dentition or indigestion, and which may be too trivial to enter under any distinct heads; *Morbi Biliosi*, such Complaints as are popularly termed *bilious*, but cannot be accurately classed.

Observations on Prevailing Diseases.

Ere the autumn was past, the winter commenced, and with extraordinary severity. On the morning of the 8th ult. there was a severe frost; therm. 27°: at night there was a sudden change, with rain, and the barometer fell in a very remarkable manner, and rose the next day with equal rapidity. Between this and the 12th, every atmospherical variety was observable.

The effects of this unseasonable cold and of the rapid changes of temperature have been very apparent upon the human frame. All the inflammatory affections have become more general and very severe. Among them, *Catarrh*, *Ophthalmia*, *Pneumonia*, *Pleuritis*, and *Rheumatismus* are most conspicuous; but we know of nothing anomalous in any of them to induce particular remark.

Diarrhœa has been rife, and in some cases has been attended with imminent hazard.

Pompholyx benignus, which we mentioned in our last as having been epidemic about Chelsea, seems to have extended for several miles on both sides of the river.

Ascites succeeded an attack of *Hæmatamesis*, which had induced a great loss of blood, and subsequent debility. Just as the Ascites appeared subdued, a hæmorrhage from the intestines ensued, and death.

A case of *Varicella* was preceded by a rose-coloured, nearly annularly figured efflorescence, somewhat resembling Roseola *Variolosa*, and appearing like it, first on the arms, breast, and sides of the face, and then extending over the trunk of the body and lower extremities. On the first day of the efflorescence, the patches were nearly of a circular form, and almost distinct from each other; but they gradually run together, and on the second day assume much of the appearance of Scarlatina, except that here and there the pustules were perceived rising through them, and on the third day the whole had nearly disappeared. During the decline, however, the annular figure of the spots became again more visible, about the size of a shilling, and paler in the disk than on the circumference. The state of pyrexia declined with the rose eruption, and the chicken pox ran their usual mild course; the number of pustules being comparatively few, and confined chiefly to the face and scalp.

Examinationes post mortem.—1. A case of *Anasarca* has existed for two months, when delirium ensued, which continued for four days, and lastly coma, which terminated in death.

The dura mater was slightly inflamed; there were about three ounces of fluid in the lateral ventricles; two quarts of fluid in each cavity of the chest; and in the abdomen, more than a gallon. The heart and liver were healthy.

2. A case of *Ascites* was occasioned by *Peritonitis,* which had occurred two years before. The patient had been tapped, and appeared to sink under a chronic diarrhœa. The peritoneum of the parietes of the abdomen was found every where thickened more than a quarter of an inch, forming a large sac; that of the intestines was inflamed and dotted with coagulable lymph, but it was not thickened; and the inner surface of the intestines was free from ulceration.

3. The subject of the fatal case of *Icterus* was a woman aged seventy-six. She had laboured under the disease for several months. The liver was found very much gorged with bile; and there were a number of large white tubercles, in its substance of a soft honey-comb structure. There was also a considerable quantity of fluid in the abdomen.

Monthly Prices of SUBSTANCES *employed in* PHARMACY.

		S.	D.
Acaciæ Gummi elect.	lb.	5	0
Acidum Citricum	-	30	0
—— Benzoicum	unc.	6	6
—— Sulphuricum	P. lb.	0	9
—— Muriaticum	-	1	8
—— Nitricum	-	4	0
—— Aceticum	unc.	3	0
Alcohol	M. lb.	3	0
Æther sulphuricus	-	10	6
—— rectificatus	-	14	0
Aloes spicatæ extractum	lb.	7	6
— vulgaris extractum	-	5	0
Alumen	-	0	6
Ammoniæ Murias	-	2	0
—— Subcarbonas	-	4	0
Amygdalæ dulces	-	4	6
Ammoniacum (Gutt.)	-	10	6
—— (Lump.)	-	5	0
Anthemidis Flores	-	2	0
Antimonii oxydum	-	7	0
—— sulphuretum	-	1	0
Antimonium Tartarizatum	-	8	0
Arsenici Oxydum	-	5	0
Assafœtidæ Gummi-resina	lb.	5	6
Aurantii Cortex		4	0
Argenti Nitras	unc.	7	0
Balsamum Peruvianum	lb.	54	0
Balsamum Tolutanum	-	24	0
Benzoinum elect.	-	12	0
Calamina præparata	-	0	6
Calumbæ Radix	-	4	0
Cambogia	-	10	0
Camphora	-	8	0
Canellæ Cortex	-	5	0
Cardamomi Semina opt.	lb.	12	0
Cascarillæ Cortex	-	4	0
Castoreum	unc.	5	0
Catechu Extractum	lb.	3	6
Cetaceum	-	3	6
Cera alba	-	3	9
—— flava	-	3	6
Cinchonæ cordifoliæ Cortex (yellow)		7	0
—— lancifoliæ Cortex (quilled)		10	0
—— oblongifoliæ Cortex (red)		16	0
Cinnamomi Cortex	-	17	0
Coccus (Coccinella)	unc.	3	6
Colocynthidis Pulpa	lb.	30	0
Copaiba	-	6	0
Colchici Radix	-	3	6
Croci stigmata	unc.	6	6
Cupri sulphas	lb.	1	2
Cuprum ammoniatum	-	10	6
Cuspariæ Cortex	-	4	0
Confectio aromatica	-	12	0

		S.	D.
Confectio Aurantiorum		3	6
—— Opii		6	6
—— Rosæ caninæ		2	0
—— Rosæ gallicæ		2	0
—— Sennæ		2	0
Emplastrum Lyttæ		7	0
—— Hydrargyri		3	0
Extractum Belladonnæ	unc.	2	0
—— Cinchonæ		3	0
—— Cinchonæ resinosum		5	0
—— Colocynthidis		3	6
—— Colocynthidis comp.		2	0
—— Conii		0	9
—— Elaterii		30	0
—— Gentianæ		0	6
—— Glycyrrhizæ	lb.	5	0
—— Hæmatoxyli	unc.	0	9
—— Humuli		0	9
—— Hyoscami	unc.	1	6
—— Jalapæ - 2s. 6d.	Res.	4	0
—— Opii		3	6
—— Papaveris		1	7
—— Rhei		3	0
—— Sarsaparillæ		1	6
—— Taraxaci		0	9
Ferri subcarbonas	lb.	5	0
— sulphas		2	0
Ferrum ammoniatum		6	0
—— tartarizatum		6	0
Galbani Gummi-resina.		12	0
Gentianæ Radix elect		1	6
Guaiaci resina		7	6
Hydrargyrum purificatum		5	6
—— præcipitatum album		9	0
—— cum creta		6	6
Hydrargyri Oxymurias	unc.	0	9
—— Submurias		0	9
—— Nitrico-Oxydum		0	9
—— Oxydum Cinereum		1	6
—— Oxydum rubrum		6	0
—— Sulphuretum nigrum		0	4
—— —— rubrum		0	9
Hellebori nigri Radix	lb.	3	6
Ipecacuanhæ Radix		17	0
—— Pulvis		19	0
Jalapæ Radix		5	6
—— Pulvis		6	6
Kino		10	6
Liquor Plumbi subacetatis	M. lb.	2	0
— Ammoniæ		3	6
Potassæ		1	6
Linimentum Camphoræ comp.		6	0
—— saponis comp.		4	6
Lichen	lb.	1	6
Lyttæ		12	0
Magnesia		10	6
Magnesiæ Carbonas		4	0
—— Sulphas, opt.		1	0
Manna optima		7	0
— communis		4	6
Moschus pod, (30s.)	in gr. unc.	48	0
Mastiche	lb.	7	0
Myristicæ Nuclei		20	0
Myrrha elect.		7	0
Olibanum		4	6
Opium (Turkey)		34	0
Opium (East India)			
Oleum Amygdalarum	lb.	4	0
— Anisi	unc.	3	0
— Anthemidis		6	6
— Cassiæ		9	0
— Caryophilli		6	6
— Carui		1	6
— Juniperi Ang.		5	0
— Lavandulæ		5	0
— Menthæ piperitæ	unc.	4	0
— Menthæ viridis Ang.		4	6
— Pimentæ	unc.	6	0
— Ricini optim.	(per bottle)	12	0

		S.	D.
Oleum Rosmarini	unc.	1	0
— Succini 2s. 6d. ——	rect.	5	0
— Sulphuratum	P. lb.	1	6
— Terebinthinæ		1	4
— — rectificatum		3	0
Olivæ Oleum	cong.	18	0
— Oleum secundum		12	0
Papaveris Capsulæ	(per 100)	3	6
Plumbi subcarbonas	lb.	0	8
— Superacetas		2	6
— Oxydum semi-vitreum		0	9
Potassa Fusa	unc.	1	4
— cum Calce		0	6
Potassæ Nitras	lb.	1	0
— Acetas		10	6
— Carbonas		4	6
— Supercarbonas		1	6
— Sulphas		1	4
— Sulphuretum		2	6
— Supersulphas		1	0
— Tartras		4	0
— Supertartras		1	10
Pilulæ Hydrargyri	unc.	0	9
Pulvis Antimonialis		0	9
— Contrayervæ comp.		0	6
— Tragacanthæ comp.		0	6
Resina Flava	lb.	0	6
Rhei Radix (Russia)		36	0
—— (East India) opt.		12	0
Rosæ petala		12	0
Sapo (Spanish)		3	0
Sarsaparillæ Radix (Lisbon)		8	0
Scammoneæ Gummi-Resina	unc.	3	6
Scillæ Radix siccat, opt.	lb.	5	0
Senegæ Radix		4	6
Sennæ Folia		6	6
Serpentariæ Radix		8	6
Simaroubæ Cortex		6	0
Sodæ subboras		3	6
— Sulphas		0	6
— Carbonas		6	6
— Subcarbonas		2	0
— — exsiccata		5	0
Soda tartarizata		2	8
Spongia usta		26	0
Spiritus Ammoniæ	M. lb.	5	0
— —— aromaticus		5	6
— —— fœtidus		5	0
— —— succinatus		5	6
— Cinnamomi		5	0
— Lavendulæ		5	0
— Myristicæ		8	6
— Pimentæ		3	6
— Rosmarini		4	0
— Ætheris Aromaticus		7	6
— — Nitrici		5	0
— — Sulphurici		7	0
— — Compositus		7	6
— Vini rectificatus	cong.	30	0
Syrupus Papaveris	lb.	2	0
Sulphur		0	9
— Sublimatum		1	0
— Lotum		1	4
— Præcipitatum		4	0
Tamarindi Pulpa opt.		2	0
Terebinthina Vulgaris		0	10
—— Canadensis		8	6
—— Chia		12	0
Tinct. Ferri muriatis		5	6
Tragacantha Gummi, elect.		8	0
Valerianæ Radix		1	8
Veratri Radix		2	6
Unguentum Hydrargyri fortius		6	0
—— —— Nitratis		2	8
—— —— Nitrico-oxydi		3	0
Uvæ Ursi Folia elect.		5	0
Zinci Oxydum		7	0
— Sulphas purif.		3	0
Zingiberis Radix opt.		4	0

Prices of New Phials per Gross.——8 oz. 70s.—6 oz. 58s.—4 oz. 47s.—3 oz. 43s.—2 oz. and 1½ oz. 36s.—1 oz. 30s.—half oz. 24s.

Prices of second-hand Phials cleaned, and sorted.——8 oz. 46s.—6 oz. 42s.—4 oz. 38s. 3 oz. 30s.—2 oz. and all below this size, 23s.

NOTICES OF LECTURES.

Dr. Darancette proposes to give instructions to young gentlemen, pursuing their professional studies, in Medical Latin and French. Mr. Callow, Crown Court, will answer any inquiries.

Dr. Davis, Physician to the Queen's Lying-in-Hospital and to the General and Central Lying-in-Charities, &c. will commence a Course of Lectures on the Theory and Practice of Midwifery and on the Diseases of Women and Children, on the 12th of December, at Six o'Clock in the Evening, at Mr. Taunton's Theatre, 87, Hatton Garden.

Dr. Merriman and Dr. Ley will re-commence their Lectures on Midwifery and the Diseases of Women and Children at the Middlesex Hospital, on December 14th, at half past ten o'clock.

LITERARY NOTICES.

Mr. A. T. Thomson is preparing for the press, a Summary of Medical Botany, intended chiefly for the use of students who are about to present themselves for examination at Apothecaries' Hall. It will be illustrated by plates.

Vol. I. Part ii. of the Transactions of the Medical Society of London is announced for publication in December.

MONTHLY CATALOGUE OF BOOKS.

Essay on the Origin, Progress, and Present State of Galvanism. By M. Donovan. 8vo.

Observations on the projected Bill for the Restricting the Practice of Surgery and Midwifery, to Members of the Royal Colleges of London, Edinburgh, and Dublin, and to Army and Navy Surgeons. 8vo.

Medico-Chirurgical Transactions, published by the Medical and Chirurgical Society of London, Vol. VII. Part II. 8vo.

NOTICES TO CORRESPONDENTS.

The Readers of the Repository *will not fail to remark, that notwithstanding the extreme length of one of the* Original Communications, *the* Editors *have, to prevent disappointment to their respectable and numerous Correspondents, added half a sheet to the present Journal.*

To the Communications of Dr. Ridout, Mr. Parkinson, Mr. Hastings, Mr. Herbert Cole, Mr. Wansbrough, Mr. Whitsed, Mr. Coombe, *&c. the earliest attention will be paid.*

The packet from Mr. Newnham *is received, and the contents are esteemed as a valued store.*

We are always anxious to hold out encouragement to Medical Students to note and reason upon every thing they see in practice. But Juvenis *must neither feel hurt nor discouraged, that we decline the insertion of his case. A little more experience will convince him of the propriety of this determination.*

To the second Letter of Medico Botanicus, *we will reply at length the earliest opportunity.*

The Title-page, Contents, *and* Index *will be given as usual with the Number for January.*

INDEX

TO

THE SIXTH VOLUME.

Aberdeen, University of, regulations respecting medical degrees 528
Abortion, accompanied with hydatids, case of 379
Acid, sulphuric, specific gravity of 24
— — table of specific gravity of 344
— muriatic, preparations of 24
— — Indian mode of preparing 241
— Iodic, on 22
— nitric, preparation of 25
— nitrous, Indian mode of preparing 240
— nitro-muriatic, experiments on 25
— phosphoric, experiments on ib.
— rosacic, on ib.
— uric, on ib.
— oxalic, on 26
— — case of death from 474
— — hints respecting the vending of 475
— carbonic 26
— — in the lungs, on the formation of 416
— acetic 26
— malic ib.
— arsenious, test of 262
— sulphureous, fuming with 343
Acorus *calamus*, its virtues 241
Æther, sulphuric, effect of keeping 256
Agave, a new species of 433
Ainslie's Materia Medica of Hindoostan, review of 240
Albers, *Dr.* on the effects of nitrate of silver on the skin 513
Albumen and gluten of vegetables, experiments on the 31
— epidermis consists of 33
Alcohol in Lissa wine, quantity of 31
Aloes, a remedy in chronic ophthalmia 241
Alstenia *teiformis*, or tea of Bogota, some account of 413
— — experiments on the 415
Anatomie Pathologique Essai sur l' 4
— *Histoire de l'* 8
Anatomy and physiology, rudiments of 2
Aneurism of the heart and aorta 333
— of femoral artery, operation for 517
Angina pectoris, two cases of 520
Animal heat, influence of the nervous system on 513
Aorta and heart, a remarkable aneurism of the 333
Apoplexy, a case of 212
— — with the dissection 265
Apothecaries, report of the Court of Examiners of the Society of 341
Apothecaries, list of certificated 345
— Hall, notices from 528
Apparatus for inducing perspiration 256
Arbutus *uva ursi*, on the 521
Armiger's Rudiments of Anatomy and Physiology 2
Armstrong's, *Dr.* Practical Illustrations of Typhus, &c. review of 380
Arsenic in water, on the solubility of oxyd of 23
— test of 343
Art, medical, in India 242
Artery, carotid, on tying the 514
— femoral, aneurism of, operation for 517
— iliac, external, tied in an operation ib.
Asthma, galvanism a cure for 165
Atmosphere in London, half-yearly synoptical view of the state of the 43
— proportion of the elements of the 339
Atoms, table of the weight of 18
Atomic theory, remarks on the 17
Auglugnier, *Dr.* on the hydatids passed by the urethra 418
Augustura *pseudo-ferruginea*, on the poisonous effects of the bark of the 89
Authenrieth, *Prof.* on consumption 154
Azote with oxygen, combinations of 522

Barton, *Prof.* on the Medical Properties of the Pyrola *umbellata* and Arbutus *uva ursi* 521
Bateman's, *Dr.* successful treatment of hydrocephalus internus 41
Baths, hepatic gas and mud 432
Battley's liquor opii sedativus 431
Belladonna Atropa in hooping-cough, on the 76
— in chorea 266
Bellingham's, observations on hydrophobia 97
Bethlehem Hospital, appointments to 88
Bill for regulating of Surgery 168
— — objections to 344
Black's, *Dr. S.* cases of angina pectoris 520
Blackett on Spiritus Salis dulcis in Scrofula 105
Bladder and testicle, cases of diseased 309
Blood, causes of the motion of the 10
— on the colour of the 32
Blow-pipe, an account of an improved 375
— *Prof. Clarke*'s experiments with the 376

INDEX.

Bone, physical qualities of 3
— setter, obs. on the practice of a 102
Bonpland and Humboldt's Nova Genera et Species Plantarum 36
BOOKS, ANALYTICAL REVIEW OF MEDICAL—*Majendie's Précis Élémentaire de Physiologie*, 62—*Orfila's Traité des Poisons, &c.* 118—*Kerr*'s Observations on the Harveian Doctrine of the Circulation of the Blood, 132—*Waller*'s Treatise on the Incubus or Night-mare, 143—*Beddingfield*'s Compendium of Medical Practice, 214—*Moreau*'s *Essai sur l'Emploi de la Résection des Os, dans le Traitement de Plusieurs Articulations affectées de Carie*, 233—*Ainslie*'s Materia Medica of Hindoostan, &c. 240—*Scudamore*'s Treatise on the Nature and Cure of Gout, 290—*Wadd*'s Cases of Diseased Bladder and Testicle, 309—*Keith*'s System of Physiological Botany, and *Mirbel*'s *Elemens de Physiologie Végétale et de Botanique*, 313, 486—*Armstrong*'s Practical Illustrations of Typhus, &c. 280—*Reid*'s Essays on Hypochondriacal and other Nervous Affections, 399—Medico-Chirurgical Transactions, vol. vii. pt. 1, 408, 512—*Stewart*'s Treatise on Uterine Hæmorrhage, 480
BOOKS, MONTHLY CATALOGUE of New 88, 176, 264, 352, 440, 536
Botany, examinations in 528
— Physiological and Vegetable, review of 313, 486
Brenan's, *Dr.* letter to the EDITORS 468
Brewster, *Dr.* on the eyes of fishes 166
Brodie on the treatment of varicose veins 518
Bulam fever, on the contagion of 186
Burnett's, *Dr.* Reply to Dr. *Pym*'s observations 441
Burrows', *Dr.* on the Pathology of Insanity 279
— Propositions relative to Insanity 287
Cases, recapitulation of, in all the genera of diseases in the Monthly Registers 48
CATALOGUE OF NEW BOOKS 88, 176, 264, 352, 440, 536
Cellular tissue, constituents of 4
Chemical combinations 19
— — from the solar rays 20
Chorea cured by belladonna 266
— in an adult cured by unusual means 520
Christ's Hospital, quarterly view of the diseases of the boys in 49, 265
Chyle and chyme, experiments on 32
Cinchona, the best species of 167
— *condaminea*, experiments on 251
Clarke's, *Prof.* experiments with *Newman*'s blow-pipe 376
Cloquet's *Traité d'Anatomie Descriptive* 2
Cocos *nucifera*, analysis of the fruit of 31
Colchicum *autumnale*, how its effects are produced 38
Collier on tying the carotid artery in operations 514
— operation of aneurism of femoral artery 517
Combinations, chemical 19
— — from the solar rays 20
— of azote with oxygen 522
Consumption, observations on 154
Contagion, syphilitic, of nurses on infants 246
Corrigenda of the Analysis of the Tunbridge Wells Waters 117
Coutanceau's, *Dr. Révision des Nouvelles Doctrines Chemico-Physiologiques* 416
Craniology 431
Cruveilhier's Essai sur l'Anatomie Pathologique 4
Crystallization, on 20
— of lime 262
Cullerier on syphilitic contagion 246
Cynanche *laryngea*, a case of 114
— *parotidea*, cases of 86
Cyst attached to the edge of the liver, upon the matter found in a 335
Cysts, synovial [illegible]

Ceraliæ, during germination and malting, saccharine matter in the seeds of the 158
Cæsarean operation, case of 519
Cajuputi oleum, account of 250
Calculus, urinary, dissolved in the Bladder 431
Carditis, a case of 50
Carotid artery, on tying of the 514
Carson's, *Dr.* Inquiry into the Causes of the Motion of the Blood 10
Daniell's case of pemphigus 277
— — of necrosis 464
Datura *fastuosa*, its use in India 242
Decandolle's *Essai sur les Propriétés Médicales des Plantes* 38
Degrees, medical, regulations of the University of Aberdeen, respecting 528
Delabillardiere's account of plants 38

INDEX.

DISEASES in LONDON, a nosological table of the, between November 20th, 1815, and May 19th, 1816 44, 48
— a general view of the, in boys between infancy and puberty at Christ's Hospital 49, 265
— at Richmond, Yorkshire, monthly observations on the 82, 170, 258, 346, 434, 530
— in London, monthly observations on prevailing 85, 173, 261, 349, 437, 533
— in London, monthly register of the 84, 172, 260, 348, 436, 532
— cure of, by the efforts of Nature 369
DISSECTIONS, MORBID 51, 174, 275, 331, 333, 334, 350, 371, 379, 475, 480, 534
Dobereiner, *M.* on phosphorus 22
Dulcamara efficacious in herpes 431
Dulong, *M.* on the combinations of azote with oxygen 522
Duncan's, *jun. Dr.* cases of inflammation of the heart 7
Dunn on the practice of a bone-setter 102
Dutrochet, *M.* on the envelopes of the fœtus 14

Earle on animal heat 513
Earths and metals, fusion of 376
Edwards' account of an improved blow-pipe 375
Elements of the atmosphere, proportion of the 339
Emmert, *Prof.* on the poisonous effects of the augustura *pseudo-ferruginea* 89
Envelopes of the fœtus, on the 14
Epidermis proved to be albumen 33
Epilepsy, a case of 479
Evolution of the fœtus, on the spontaneous 13
Excretion diminished, and suppression of urine, on the 353
Exudation from the bark of trees, on the 30
Eye, on a painful affection of the appendages of the left 471

Fat in tad-poles and frogs, on the formation of 165
Fecula of wheat, sugar from the 30
Femoral artery, operation for aneurism of the 517
Fever, petechial, a case of 116
— *Bulam*, on the contagion of 186
— *puerperal*, a case of 271
— — cured by spirits of turpentine 468
— a case of infantile remittent 479
Fibres of muscles, laceration of 518
Field's view of the diseases of the boys in Christ's Hospital between infancy and puberty 49, 265
Figuier's, *M.* experiments on the preparation of oxide of gold 424
Fishes, on the lens of the eyes of 166
Fish poison, on 122
Flag, sweet, its virtues 241
Fœtus, on the spontaneous evolution of the 13
— on the envelopes of the 14
— found in another fœtus, a 330
— particulars concerning the structure of a monstrous 413
Fracture of the os humeri, treated by Seton 416
Frank, *Dr.* on Plica *Polonica* 417
Frost on trees, effects of 164
Fumigating of infected letters 255
Fusion of the earths and metals by the action of oxygen and hydrogen gases, on the 376

Galvanism in nervous disorders, on the application of 165
— in asthma ib.
— experiments on 169
Garlick, experiments on 337
Gases generated in the human intestines, on the 421
— effects of a condensed stream of oxygen and hydrogen 376
Gastrocnemius muscle, laceration of the 518
Gay Lussac on Iodic acid 22
Giraud's mode of preserving vaccine lymph 219
Gluten and albumen of vegetables, experiments on 31
Gold, on the precipitation of the oxide of, by potash, and the medicinal exhibition of the triple muriate of gold, and of soda 424
Goldwyer, *Mr.* freedom of Bristol presented to 440
Goodlad on tying the carotid artery 414
Gout, contagious, the 166
— *Dr. Lucas's* remedy for 342
— definition of 292
— acute ib.
— chronic 293
— retrocedent ib.
Guinea-worm, mode of penetrating the skin 35
Gun-shot wound of the shoulder-joint, operation for 516

Hearing. extraordinary recovery of 73
Heart, malformation of the 5
— case of disease of the 7
— cases of inflammation of the ib.
— and aorta, remarkable aneurism of 333
Heat, on the influence of the nervous system on animal 513

INDEX.

Henry, Dr. on the absence of urea in the urine of hepatitis 61
Hepatitis, on the absence of urea in the urine of 57
Hernandez, M. Essai sur le Typhus 40
Holland, Dr. on sulphate of magnesia 166
Home, Sir Everard, on the effects of colchicum *autumnale* 39
— — on the formation of fat in tadpoles and frogs 165
— — on the mechanism of insects 255
Horns of black cattle, components of 33
Human body, temperament of the 430
Humboldt and Bonpland's Nova Genera et Species Plantarum 36
Hydatids passed by the urethra 418
— attending an abortion, great quantity of 379
Hydatitodes hydrops, a case of 332
Hydrophobia in sheep, with dissections 97
— case of 117
Hydrocephalus internus, successful treatment of 41
— in sheep 343
Hydrops hydatotides, a case of 332
Hyosciamus *niger* in tic douloureux, use of 42

Ileus, a case of 174
Iliac artery, external, tyed 517
Incubus, or night-mare, on 41
Inflammation, observations on 52
Insanity, *Dr. Burrows'* obs. on the pathology of 279
— propositions relative to 287
Iodic acid, on 22
Johnson, Dr. J. R. on the medicinal leech 34
Johnson's case of death from oxalic acid 474
Jones', Dr. E. G. chemical analysis of the mineral waters of Spa 408
Ireland on the changes of the Rana *paradox* 16
Iron, experiments on 23

Keith's System of Physiological Botany, review of 313, 486
Kelly, Dr. on the spontaneous evolution of the fœtus 13
Kerr on the Harveian Dooctrine of the Circulation of the Blood, review of 132
Kerrison on chorea cured by belladonna 256
Kirchoff, M. on the formation of saccharine matter in the seeds of the *Ceraliæ* during germination and malting 158
Knight on the detached leaves of vegetables 165
Knox, Dr. on a case of apoplexy 275

Laceration of the fibres of muscles, on the 518
Lagrange's experiments on garlic 337
Larynx, on the bony growth of the cartilages of the 516
Laubert, M. on cinchona *condaminea* 251
Lauth's, Dr. Histoire de l'Anatomie 8
Leaves of vegetables, on the 165
— germination of 433
LECTURES, NOTICES of 88, 176, 256-7, 264, 344
Leech, medicinal, on the 34
Leese on the preservation of vaccine lymph 363
Lens of the eyes of fishes, on the optical structure of the 166
Letter to the EDITORS, *Dr. Brenan*'s 468
Ligneous matter in the roots of fruits, on 20
Lime, on chrystallization of 262
Link's experiments on chemical combinations 19
LITERARY NOTICES 176, 264, 352, 433, 536
Liver, moxa a remedy for scirrhous 167
— upon the matter in a cyst attached to the edge of the 335
— diseases of the, a frequent cause of insanity 284
LONDON, monthly meteorological tables of, 82, 171, 259, 347, 435, 531
— monthly register of the diseases in 84, 172, 260, 348, 436, 532
— monthly observations of the prevailing diseases in 85, 173, 261, 349, 437, 533
— monthly bill of mortality of, 83, 171, 259, 347, 435, 531
Lusus naturæ in a pig 209

Macabe, Dr. on puerperal fever treated with spirit of turpentine 468
Magnesia, on the manufacture of the sulphate of 166
— on the bad effects of the incautious use of 244
Magnetic cures 329
Majendie's Elementaire de Physiologie 9
— —— review of 62
— on the gases in the intestines 421
Manganese, oxides of 24
Mania, a case of 377
Marcet, Dr. on chyle and chyme 32
Martius, M. on oleum cajuputi 250
MEDICAL SCIENCE, RETROSPECT OF, 1
— art in India 242
Metals and earths, fusion of 376
Methuen, M. on chrystallization 20
Midwifery, remarks on Scripture 365, 467
Mineral waters, analysis of the Tunbridge Wells' 27
— — of l'Abbaye du Bal 23

INDEX.

Mineral Waters of the High and Low Pyrenees, tabular view of the 29
— — of Yorkshire, remarks on 177
— — of Spa, analysis of the 408
— — Seltzer, analysis of the 432
— — — exportation of 433
Mirbel's Elemens de Physiologie Végétale et de Botanique, review of, 313, 486
MORBID DISSECTIONS, 51, 174, 275, 331, 333, 350, 371, 379, 475, 480, 534
Moreau's Essai sur l'Emploi de la Résection des Os, dans le Traitement de Plusieurs Articulations affectées de Carie 233
Morel's operation for the removal of the head of the os humeri, &c. from gun-shot wound 516
Moxa a remedy for scirrhous liver 167
Muriatic acid, Indian mode of preparing 241
Muscle, constituents of 3

Nature, efforts of, cure of diseases by the 369
Nails, components of 33
Necrosis, a case of 465
Nervous influence, experiments on the 17
Newnham on the cure of diseases by the efforts of Nature 369
Night-mare, or Incubus, review of a Treatise on 143
Nitrate of silver, effects on the colour of the skin by 513
Nitrous acid, Indian mode of preparing 210
NOTICES of LECTURES, 88, 176, 256, 344, 440, 536
— to CORRESPONDENTS, 176-7, 264, 352, 440, 536
— LITERARY, 176, 264, 352, 433, 536
— to medical students 528
Nova Genera et Species Plantarum, *Bonpland and Humboldt's* 36

Observationes quædam de Hottentotis, præsertim de Structura genitalium peculiari Hottentotarum 412
Œsophagus, on the effects of tying the 128
Oleum Cajuputi, history of 250
Opii sedativus, liquor 256
— — — useful in coughs 343
— — notice of 431
Opium, sedative effects of, decomposed 40
Orfila's Toxicologie, conclusion of 118
Os humeri, fracture of, treated by Seton 516
Oxalic acid, experiments on 26
— — case of death from 474
— — hints respecting the vending of 475
Oxygen with azote, combinations of 522

Parry's, Dr. remarks on *Dr. Wilson Philips'* obs. on inflammation 113
Pathologique Essai sur l'Anatomie 4
Pathology of insanity, observations on 279
Peacock's case of union of a finger, divided at the middle joint 368
Pemphigus, a case of 277
Perspiration, apparatus for inducing 256
Pharmacopœia, New French, announced 352
PHARMACY, monthly prices of substances employed in, 86, 174, 262, 350, 438, 534
PHIALS, monthly prices of, 86, 175, 263, 351, 439, 535
Phillips', Dr. Wilson, experiments on nervous influence 17
— observations on inflammation, in reply to *Dr. Parry* 52
— on galvanism in nervous disorders 165
Phlegmasia *dolens*, a case of 289
Phosphorus, *Doberciner* on 22
Physiological and Vegetable Botany, review of 313, 486
Physiologie, Precis Elementaire de, review of 62
Physiology, rudiments of anatomy and 2
Pig, lusus naturæ in a 209
Plantes, Essai sur les Propriétés Medicales des 39
Plants, geographical distribution of 37
— in South America, families of ib.
— cause of the upright growth of ib.
— *Delabillardiere's* account of 38
Platinum, a new combination of 23
Plica *Polonica*, on the cause of 417
Plutonium, how obtained 432
Poison of sulphuretted hydrogen gas 118
— animal 119
— of the viper 123
— of rattle-snakes 121
— of the scorpion ib.
— of spiders 122
— of the tarantula ib.
— of bees ib.
— of the wasp and hornet ib.
— of fish ib.
— of rabies 124, 127
— of the malignant pustule, remedy for the 126
— of corrosive sublimate 127
— — white of egg an antidote to the 167
— of verdigris, and its antidote ib.
Poisoning by oxalic acid, fatal case of 474
Poisons, gaseous, on 130
— rules to detect the nature of 131
Poisons, Orfila's Traité des, review of 118
Poisonous effects of the *Pseudo-ferruginea* augustura bark, on the 89
— serpents, remedy for 125
Pompholyx, epidemic 438, 534
Prize Questions, Royal Medical Society of Edinburgh 166

INDEX.

Prochaska's, Dr. observations and examination of a fœtus found in another fœtus 330
Pudendum of female children, fatal affection of the 519
Puerperal fever, a case of 271
— — cured by spirits of turpentine 468
Purpura *simplex*, a case of 173
— *hæmorrhagica*, a case of 478
Pustule, malignant, of the 126
Pym, Dr. on the contagion of the Bulam fever 186
Pyrenees, mineral waters of the High and Low 29
Pyrola *umbellata*, medical properties of the 520

Rabies, *Orfila*'s opinion on the origin of 124
Raisin on Atropa *belladonna* in hooping-cough 76
Rana *paradox*, changes in the 16
REGISTER of the DISEASES of LONDON, monthly, 84, 172, 260, 348, 436, 532
Reid's, Dr. Essays on Hypochondriasis, review of 399
Remer's, Prof. case of hydrops hydatitodes 332
Remittent infantile fever, case of 479
Reply, *Dr. Burnett's*, to *Dr. Pym's* observations 441
Report of the COURT of EXAMINERS of the SOCIETY of APOTHECARIES 341
RETROSPECT of MEDICAL SCIENCE 1
RICHMOND, *Yorkshire*, monthly meteorological table kept at, 82, 170, 258, 346, 434, 530
— — monthly observations on the diseases of 82, 170, 258, 346, 434, 530
Ring on the origin of vaccine virus 101
Ring-pessary, advantages of the 379
Robarts on cynanche laryngea 114
Rose on the absence of urea in the urine of hepatitis 57
—'s account of a lusus naturæ 209
Roseola *varicella*, case of 534
Rudiments of Anatomy and Physiology 2

Saccharine matter in the seeds of the *ceraliæ* 158
SALISBURY, medical topography of 106
Saussure on the proportion of the elements of the atmosphere 339
— an account of his illness and death 521
SCIENCE, RETROSPECT of MEDICAL 1
Scripture Midwifery, remarks on, 365, 467
Scrofula, on sp. salis dulcis in 105
Scudamore's, Dr. Analysis of the Tunbridge Wells Water 27
— Treatise on the Gout, review of 290
SELECTIONS. *Faxar*'s Account of a Soda Lake in South America, 150 —*Brande* on the bad effects of the incautious use of magnesia, 244—magnetic cures, 329—*Faxar*'s account of the Alstenia *teiformis*, or Tea of Bogota, 413
Seltzer water, an analysis and account of 432
Serpents, remedies for poisonous 125
Seton, fracture of the os humeri treated by 416
Sheep, on hydrophobia in, with dissections 99
Silver, nitrate of, on the effects of, on the skin 513
Skin coloured by the taking nitrate of silver ib.
Smith's, Dr. H. medical topography of Salisbury 106
SOCIETIES, meetings of Royal 165, 255
— Royal Academy of Sciences at Paris 166
— Physico-Medical of Erlangen ib.
— Apothecaries, Report of the Court of Examiners 341
— Medical Benevolent 342
— for Relief of the Widows and Orphans of Medical Men in London, &c. 429
— for the Benefit of Widows and Orphans of Officers of the Hospital and Regimental Staff of the Army 429
— New Rupture 430
Soda Lake, an account of a 150
Somerville, Dr. Observationes quædam de Hottentotis, &c. 412
Somnambulism, singular case of 475
Spa mineral waters, analysis of 408
Spens', Dr. case of disease of the heart 7
Spiritus salis dulcis in scrofula, on the use of 105
Stansfield on fracture treated by Seton 516
Stevenson on a painful affection of the appendages of the left eye 471
Stewart's, Dr. Treatise on Uterine Hæmorrhage, review of 480
Stickleback, (Gasterosteus *aculeatus*,) observations on the 34
Students, medical, notice to 528
Suppression and diminished excretion of urine, on the 353
SURGERY, Bill for regulating of 168
SURGEONS' Bill, objections to 344
Synovial fluid, constituents of the 3
— cysts, on 5
Syphilitic contagion, in relation to nurses and infants, on 246

INDEX.

TABLE, A NOSOLOGICAL, of the diseases of London, between Nov. 1815 and May 1816 44, 48
— meteorological, monthly, for London 83, 171, 259, 347, 436
— — for Richmond, Yorkshire, 82, 170, 258, 346, 435
— of the specific gravity of sulphuric acid 344
— of the weight of atoms 18
Tact and Touch, distinction between 69
Temperature of the human body 430
Test of arsenious acid 262
— of arsenic 364
Testicle and bladder, cases of diseased 309
Theory, remarks on the atonic 17
Tic douloureux, on hyosciamus in 42
Topography, medical, of Salisbury 106
Touch and Tact, distinction between 69
Traité d'Anatomie descriptive 2
Transactions, Medico-Chirurgical, review of, vol. vii. pt. 1 408, 512
Travers, Dr. F. on the bony growth of the cartilages of the larynx 516
Trees, effects of frost on 164
Tunbridge Wells, analysis of the mineral waters of 27
— — correction of an error in the analysis of 117
Turpentine, cases of puerperal fever treated with spirits of 468
Typhus, Practical Illustrations of 380
Typhus, Essai sur le 40

Vaccine virus, instance of the origin of 102
— lymph, mode of preserving 211
— —— insertion 363
Varicose veins, treatment of 518
Vauquelin on the colour of the blood 32
Vegetable and Physiological Botany, review of 313, 426
Veins, varicose, treament of 518
VIEW, SYNOPTICAL, of the atmosphere in London, from Nov. 1815 to May 1816 43
— quarterly, of the diseases of the boys in Christ's Hospital 49, 265
Vogel on chemical combinations from the solar rays 20
Voice, mechanism of the 71
Union of a finger divided at the middle joint 368
Urea, on the absence of, in the urine of hepatitis 57
Urinary calculus dissolved in the bladder 431
Urine of hepatitis, absence of urea in the 57
— on the suppression and diminished excretion of 353
Uva ursi, medical properties of 520

Wadd's Cases of Diseased Bladder and Testicle, review of 200
Walker, Dr. J. N. on the mineral springs of Yorkshire 177
Waller on Incubus 41
— —— review of 143
Wardrop on the laceration of the fibres of muscles 518
Wood's case of Cæsarean operation 519
— on a fatal affection of the pudendum of female children ib.
Wood's case of chorea sancti viti 520
Woodward on puerperal fever 271

Young's Dr. N. case of malformation of the heart 5
— queries on the circulation 6

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